

UC Santa Cruz

Teaching Direct Marketing and Small Farm Viability

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## UNIT 3

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# Introduction to Community Supported Agriculture

## UNIT OVERVIEW

*Community Supported Agriculture (CSA) is an agricultural and community development movement that was developed to serve a dual purpose: as a stable marketing opportunity for growers, and as a way to reconnect consumers with the sources of their food and foster closer personal relationships between farmers and their communities.*

*Robyn Van En, one of the early pioneers of CSA in America, expressed the concept dually. She wrote that Community Supported Agriculture should be coupled with ASC—Agriculturally Supported Communities. This mutually supportive relationship between producer and consumer was what CSA was founded upon. In 1985, Van En wrote that CSA embodied the principle of “local food for local people at a fair price to them and a fair wage to the growers. The members’ annual commitment to pay their share of the production costs and to share the risk as well as the bounty set this apart from any other agricultural initiative” (Henderson and Van En, 2007).*

Since Robyn Van En and other farmers kick-started the CSA movement in the mid 1980s, much has changed in the way that both farmers and the public perceive Community Supported Agriculture. While some farmers continue to subscribe to the original tenets of CSA (later described), many farmers, communities, and companies now use the term CSA to encompass a wide variety of market and community relationships.

Throughout the changes in the conception and practice of Community Supported Agriculture, the UCSC Farm & Garden of the Center for Agroecology & Sustainable Food Systems (CASFS) has remained committed to many of those founding tenets of CSA. In particular the Farm and Garden supports both in practice (on our farm) and in teaching (both to our apprentices and in this manual) the concepts of locally grown organic food, affordability, and seasonal commitment. In doing so, the Farm and Garden attempts to bridge the growing gap between these founding ideals while adapting to the faster-paced, more customer-oriented version of CSA projects that exist today.

This unit on direct marketing through Community Supported Agriculture introduces students to the history of CSA and today’s various CSA structures. In addition, this unit will focus in depth on the two primary forms of CSA (the Membership/Share Model CSAs and the Subscription Model), illustrating how CSA structure, outreach, and administration differ for each model. The unit also covers the agronomic considerations for running a CSA, including crop planning, soil fertility, harvest, and post-harvest handling.

Along with lecture outlines, each unit contains appendices that include student exercises and/or information that the instructor can use as visual examples and student handouts.

**Unit 3.1 – History of CSA** explores the history and development of the community supported agriculture movement, introducing students to the principal figures and the economic and social values that have directed the growth of this model of sustainable agriculture in Europe, Japan, and North America.

**Unit 3.2 – CSA Structure and Organization** examines the various forms that a CSA operation can take, from those run by a farmer to those run by the community. It discusses variations on the CSA model, examines some of the challenges of running a CSA project, and lists training opportunities for learning CSA farming skills.

**Unit 3.3 – CSA Outreach** looks at strategies for recruiting CSA members, developing low-income memberships, developing a core group, and producing outreach materials such as brochures, pledge forms, and printed and online newsletters.

**Unit 3.4 – CSA Administration** introduces the nuts and bolts of organizing the administrative details of a CSA operation, including advertising, correspondence with CSA members, billing, and creating databases.

**Unit 3.5 – CSA Crop Planning** covers the basic considerations involved in developing the type of diverse mixed fruit and vegetable operation required for CSA production. This unit also includes a crop planning exercise and a number of appendices that can be used to develop a crop plan and track CSA field production.

**Unit 3.6 – CSA Harvest & Post-Harvest Handling** outlines the techniques involved in successful harvesting and post-harvest handling of crops for CSA operations, including information on packing CSA shares, harvest record keeping, and harvest crew management.

## MODES OF INSTRUCTION

- > LECTURES (1-2 HOURS EACH)
- > STUDENT EXERCISE (UNIT 4.5)

## LEARNING OBJECTIVES

### CONCEPTS

- Historical development of community supported agriculture in Europe, Japan, and the U.S.
- Various CSA structures and organizational models
- Opportunities and challenges presented by the CSA model
- Techniques for recruiting CSA members and administering a CSA
- CSA crop planning considerations
- Harvesting and post-harvest handling considerations for a CSA operation

### SKILLS

- Understanding of various CSA management techniques
- Ability to develop a basic crop plan for a mixed vegetable CSA operation

# Resources & References

## PRINT

Adam, Katherine. 2006. *Community Supported Agriculture*. Fayetteville, Arkansas: ATTRA-National Sustainable Agriculture Information Service. [attra.ncat.org/attra-pub/summaries/summary.php?pub=262](http://attra.ncat.org/attra-pub/summaries/summary.php?pub=262)

*This publication reports on the history of Community Supported Agriculture (CSA) in the U.S. and discusses the various models that have emerged. Recent trends in the CSA movement are presented and demographic information provided about the distribution of CSA farms in the U.S. Several CSA cases are profiled and a survey of recent research is presented. References and resources follow the narrative.*

Butler Flora, Cornelia, and Corry Bregendahl. 2007. The role of collaborative community supported agriculture: Lessons from Iowa. *Leopold Center Progress Report* 16:44-7.

*The aim of this research project was to understand the role collaborative Community Supported Agriculture (cCSA) plays in community and economic development in Iowa.*

de Selencourt, Kate. 1997. *Local Harvest: Delicious Ways to Save the Planet*. Lawrence and Wishart.

*Outlines the array of benefits—for people and the environment—that responsible food production and marketing can bring. It also shows that good food costs less when it's local.*

Douthwaite, R. J., and Richard Douthwaite. 1998. *Short Circuit: Strengthening Local Economics for Security in an Unstable World*. New York: Green Books.

*Chronicles the many efforts by regular people to recapture their economies and their resources from sprawling, globalized systems. Chapter 6—Living from the Land—has a section about CSA as well as Buschberghof. Available online in its entirety at [www.feasta.org/documents/shortcircuit/index.htm](http://www.feasta.org/documents/shortcircuit/index.htm).*

Groh, Trauger, and S. McFadden. 2000. *Farms of Tomorrow Revisited: Community Supported Farms—Farm Supported Communities*. The Biodynamic Farming and Gardening Association.

*Provides an introductory overview of the need for alternative farming systems and*

*offers multiple case studies of successful CSA operations. Contains useful overviews of alternative land tenure options for CSA producers. Sample budgets for a CSA operation are included, along with suggestions for the formation and management of farmers' markets.*

Henderson, Elizabeth, and Robyn Van En. 2007. *Sharing the Harvest: A Citizen's Guide to Community Supported Agriculture—Revised and Expanded Edition*. White River Junction, VT: Chelsea Green Publishing Co.

*A revised and expanded version of this excellent introduction to the CSA model. Covers all aspects of CSA from organization to production and distribution considerations, including how “community support” may be applied to other industries.*

Henderson, Elizabeth. 2010. The World of Community Supported Agriculture. Keynote address at Urgenci Conference on Community Supported Foods and Farming, 22 February, at Kobe, Japan. [www.chelseagreen.com/content/elizabeth-henderson-the-world-of-community-supported-agriculture/](http://www.chelseagreen.com/content/elizabeth-henderson-the-world-of-community-supported-agriculture/)

*A brief history of CSAs and an around-the-world tour of the present trends in the CSA movement.*

Jackson, Greg, Amanda Raster, and Will Shattuck. 2011. An analysis of the impacts of health insurance rebate initiatives on Community Supported Agriculture in southern Wisconsin. *Journal of Agriculture, Food Systems, and Community Development*, 2 (1): 287 – 296.

Lass, Daniel, Ashley Bevis, G. W. Stevenson, John Hendrickson, and Kathy Ruhf. No Date. *Community Supported Agriculture Entering the 21st Century: Results from the 2001 National Survey*. Amherst: University of Massachusetts, Department of Resource Economics. [www.cias.wisc.edu/wp-content/uploads/2008/07/csa\\_survey\\_01.pdf](http://www.cias.wisc.edu/wp-content/uploads/2008/07/csa_survey_01.pdf)

Madison Area Community Supported Agriculture Coalition. 1996. *From Asparagus to Zucchini: A Guide to Farm-Fresh Seasonal Produce*.

*The main section of the book features 51 different vegetable and herb sections. Each section includes nutritional, historical, and*

storage information as well as cooking tips and specific recipes—over 385 recipes in all. Includes essays that address how food choices fit into our economy, environment, and communities. Includes information on home food preservation and an extensive resource section and recipe index.

McFadden, Steven. 2011. *The Call of the Land: An Agrarian Primer for the 21st Century, Second Edition*. Bedford, IN: NorLights Press.

*More theoretical. A good teaching tool for families and communities to learn about the alternative food system. Includes ways for families, neighborhoods, communities, schools, and churches to contribute to the good food movement by supporting alternative agriculture.*

McFadden, Steven. 2004. *The History of Community Supported Agriculture, Part I and II: CSA's World of Possibilities*. Rodale Institute. [www.new-farm.org/features/0104/csa-history/part1.shtml](http://www.new-farm.org/features/0104/csa-history/part1.shtml)

Norberg-Hodge, Helena, Todd Merrifield, and Steven Gorelick. 2000. *Bringing the Food Economy Home: The Social, Ecological and Economic Benefits of Local Food*. London: International Society for Ecology and Culture (ISEC).

*An ISEC report showing that the globalization of food is not only undermining farmers and damaging the environment, but also posing a real threat to human health, food security, local economies, and, ultimately, consumers.*

Norberg-Hodge, Helena, Peter Goering, and John Page. 2000. *From the Ground Up: Rethinking Industrial Agriculture*. London: International Society for Ecology and Culture (ISEC) and Zed Books.

*An analysis of the roots of the environmental, social, and economic crises facing modern industrial agriculture, and a review of more sustainable options.*

Norberg-Hodge, Helena, Todd Merrifield and Steven Gorelick. 2002. *Bringing the Food Economy Home: Local Alternatives to Global Agribusiness*. London: Zed Books.

*Based on the ISEC report (above), this book includes some new and updated information, a resource guide, and an index.*

Perry, Jill, and Scott Franzblau. 2010 (revised). *Local Harvest: A Multi-Farm CSA Handbook*. Sustainable Agriculture Research and Education (SARE). [www.sare.org/publications/csa/csa.pdf](http://www.sare.org/publications/csa/csa.pdf)

*Offers straightforward guidance on an innovative practice that is helping CSAs stay strong and viable over the long term: cooperative marketing. The 130-page book details how farmers in CSA cooperatives can best work together to market their produce, including advice on staffing, volunteer boards, distribution, legal topics and other practical information.*

Peterson, Farmer John, and Angelic Organics. 2006. *Farmer John's Cookbook: The Real Dirt on Vegetables*. Layton, Utah: Gibbs Smith.

*Lyrical yet practical, this cookbook chronicles the lives of vegetables as they make their voyage from field to feast, celebrates the seasonal cycles of fresh produce, and will inspire delicious, healthful food for your table.*

Soil Association. 2001. *A Share in the Harvest—An Action Manual for Community Supported Agriculture*. (Ringbound manual)

*A practical guide to support those—including farmers/growers, consumers, and activists—who wish to develop community supported agriculture (CSA) initiatives. The manual uses experiences from CSA farms in the United Kingdom and overseas and includes information on CSA models, membership, finance and legal issues, land and share issues, grant advice, and useful publications.*

Soil Association. 2001. *A Share in the Harvest—A Feasibility Study for Community Supported Agriculture*.

*This feasibility study looks at how community supported agriculture (CSA) can help in the development of local and sustainable food economies. It investigates community involvement in farming around the globe and in a number of established and planned CSA initiatives in England. Eleven case studies provide the basis of discussion, along with relevant policy recommendations and areas for future research.*



Tuin, Jan Vander. 1992. Zürich Supported Agriculture. *RAIN magazine* 14(2), Winter/Spring.

*This article describes the philosophy and inspiration for CSA in Switzerland which Jan Vander Tuin brought to the the US to help inform the beginnings of CSA on the east coast.*

## WEB-BASED RESOURCES

Alternative Farming Systems Information Center

[www.nal.usda.gov/afsic/csa](http://www.nal.usda.gov/afsic/csa)

*An excellent and comprehensive resource for accessing information on all topics in print and video media relating to CSA. AFSIC is a cooperative effort between the Cooperative State Research Education and Extension Service (CSREES) and the National Agricultural Library (NAL) of the U.S. Department of Agriculture (USDA). “CSA Resources for Farmers or Producers” provides extensive CSA-related information, online articles, and print resources. “Organizations and Related Web Sites” will take you to the support groups in your area that can provide further, regionally specific information and crucial one-on-one support for CSA endeavors. These centers provide information about books and periodicals, and provide access to farm budgets, crop tracking sheets, and management software.*

Angelic Organics

[www.csalearningcenter.org](http://www.csalearningcenter.org)

*A comprehensive information clearinghouse on all aspects of CSA. The CSA Learning Center is a nonprofit resource center (501(c)3) that provides opportunities for diverse community members, prospective farmers, and CSA shareholders from the greater Chicago area. Includes youth education programs; models for developing low-income CSA shares; technical assistance and training programs for regional producers, among others.*

The Biodynamic Farming and Gardening Association:

[www.biodynamics.com](http://www.biodynamics.com)

*The Biodynamic Farming and Gardening Association is a nonprofit, membership organization and is open to the public. The association has an educational focus and conducts conferences, workshops and seminars. The Biodynamic Farming and Gardening*

*Association maintains a national CSA online database.*

The Center for Agroecology & Sustainable Food Systems (CASFS)

[casfs.ucsc.edu](http://casfs.ucsc.edu)

*A research, education, and public service program at the University of California, Santa Cruz, dedicated to increasing ecological sustainability and social justice in the food and agriculture system. On the UCSC campus, the Center operates the 3-acre Alan Chadwick Garden and the 33-acre UCSC Farm. Both sites are managed using organic production methods and serve as research, teaching, and training facilities for students, staff, and faculty. The CASFS operates a 130-member CSA program and conducts research and publishes articles on the efficacy of alternative food initiatives such as CSA.*

Center for Integrated Agricultural Systems

[www.cias.wisc.edu](http://www.cias.wisc.edu)

*Brings together university faculty, farmers, policy makers, and others to study relationships between farming practices, farm profitability, the environment, and rural vitality. Includes links to sustainable grazing dairy systems, pastured poultry, and the School for Beginning Dairy Farmers; research summaries on CSA; information on the School for Beginning Market Gardeners and on developing farm-to-college projects.*

Community Alliance with Family Farmers (CAFF)

[www.caff.org](http://www.caff.org)

*A searchable web resource containing information on CSA and other related regional food system initiatives. Contains notices of current agriculture public policies, listing of current CAFF publications as well as a calendar of sustainable agriculture events. Contains links to multiple CAFF-sponsored agriculture and wildland interface projects. In 2013 CAFF co-hosted the URGENCI worldwide CSA conference.*

Educational and Training Opportunities in Sustainable Agriculture

[www.nal.usda.gov/afsic/AFSIC\\_pubs/edtr.htm](http://www.nal.usda.gov/afsic/AFSIC_pubs/edtr.htm)

*A comprehensive listing of post-secondary education and training opportunities in*

*sustainable agriculture. Contains listings of both academic and practical training programs.*

#### The Equity Trust, Inc.

[equitytrust.org/equity-trust-fund/](http://equitytrust.org/equity-trust-fund/)

*Equity Trust, Inc. is a nonprofit organization concerned with the principles of equity and their practical applications as they relate to land tenure. Equity trust provides planning, financial, and technical assistance in negotiating alternative land tenure arrangements for low-income persons. Equity Trust, Inc. also maintains a low-interest revolving loan program for new CSA farmers.*

#### FairShare Coalition

[www.csacoalition.org/](http://www.csacoalition.org/)

*Formerly known as MADSAC, FairShare is a regional coalition of CSA Farms in the Madison area. The non-profit engages in education, outreach, community building, and resource sharing in order to attract new consumers and support CSA farmers in their region. They have a collaborative model for sponsoring low-income CSA shares.*

#### The Food Project

[www.thefoodproject.org](http://www.thefoodproject.org)

*A unique program involving youth workers and adult volunteers growing organic vegetables for homeless shelters, CSA shareholders, and farmers' markets in the Boston area.*

#### FoodRoutes Network

[www.foodroutes.org](http://www.foodroutes.org)

*FoodRoutes Network, LLC (FRN) provides communications tools, technical support, networking and information resources to organizations nationwide that are working to rebuild local, community-based food systems. FRN is dedicated to reintroducing Americans to their food – the seeds it grows from, the farmers who produce it, and the routes that carry it from the fields to their tables.*

#### Growing Food and Justice

[www.growingfoodandjustice.org/](http://www.growingfoodandjustice.org/)

*The Growing Food and Justice for All Initiative is a new initiative aimed at dismantling racism and empowering low-income and communities of color through sustainable and local*

*agriculture. This comprehensive network views dismantling racism as a core principal which brings together social change agents from diverse sectors working to bring about new, healthy and sustainable food systems and supporting and building multicultural leadership in impoverished communities throughout the world.*

#### Growing Power

[www.growingpower.org](http://www.growingpower.org)

*Growing Power transforms communities by supporting people from diverse backgrounds and the environments in which they live through the development of Community Food Systems. These systems provide high-quality, safe, healthy, affordable food for all residents in the community. Growing Power develops Community Food Centers, as a key component of Community Food Systems, through training, active demonstration, and outreach.*

#### The Hartford Food System (HFS)

[www.hartfordfood.org](http://www.hartfordfood.org)

*A private, nonprofit organization working to create an equitable and sustainable food system that addresses the underlying causes of hunger and poor nutrition facing lower-income and elderly Connecticut residents. HFS has developed dozens of projects, initiatives, and coalitions that tackle a wide range of food cost, access, and nutrition problems.*

#### International Society for Ecology and Culture

[www.isec.org.uk](http://www.isec.org.uk)

*A nonprofit organization concerned with the protection of both biological and cultural diversity. ISEC has developed and maintains many programs that focus on promoting local production and consumption of products as a way to maintain economic and cultural self-determination.*

#### Just Food

[www.justfood.org](http://www.justfood.org)

*Encourages new marketing and food-growing opportunities that address the needs of regional, rural family farms, New York City community gardeners, and New York City communities through encouraging CSA relationships, hosting workshops, providing training materials in horticulture, marketing, garden preservation, leadership development, and emergency*

*food relief. Just Food also conducts training, leadership development, and outreach programs to address these issues.*

#### Local Harvest

[www.localharvest.org](http://www.localharvest.org)

*Maintains a public nationwide directory of small farms, CSAs, farmers' markets, and other local food sources. Their search engine helps people find local sources of sustainably grown food, and encourages them to establish direct contact with family farms in their local area. Listing your farm on their service is free and can be one of the best ways to connect with consumers.*

#### The Maine Organic Farming and Gardening Association

[www.mofga.org](http://www.mofga.org)

*A sustainable horticulture and agriculture advocacy group offering technical assistance; agriculture, public policy, and consumer awareness education programs; organic certification services; and public events.*

#### Marcie Rosenweigg's Market Farm Forms

[www.back40books.com/i/1395/market-farm-forms.htm](http://www.back40books.com/i/1395/market-farm-forms.htm)

*Market Farm Forms: Spreadsheet Templates for Planning and Organizing Information on Diversified Market Farms is a software program containing recordkeeping spreadsheet templates for use in direct-marketing operations (e.g., farmers' markets, CSAs, direct sales to restaurants and co-ops). The forms are intended to help direct market growers make better management decisions and to help small producers comply with the record-keeping requirements for organic certification.*

#### Northeast Organic Farming Association

[www.nofa.org](http://www.nofa.org)

*A grassroots association with 7 state chapters of farmers, homesteaders, organic land care professionals and gardeners encouraging the adoption of sustainable farming and gardening practices and direct market/consumer support relationships. See, e.g.: [www.nofamass.org](http://www.nofamass.org); [www.nofany.org](http://www.nofany.org).*

#### The Pennsylvania Association for Sustainable Agriculture

[www.pasafarming.org](http://www.pasafarming.org)

*A sustainable agriculture advocacy organization promoting environmentally sound and economically viable regional agriculture through marketing and production-oriented technical assistance programs.*

#### The Robyn Van En Center

[www.csacenter.org](http://www.csacenter.org)

*An excellent clearinghouse for all information relating to CSA. Includes a national CSA farm directory; publications and products; an online posting of events, positions, and technical assistance relating to CSA production.*

#### Sustainable Agriculture Research and Education (SARE) Program, National Database of Projects

[www.sare.org/Project-Reports/Search-the-Database](http://www.sare.org/Project-Reports/Search-the-Database)

*Searchable database of project reports including several about CSA.*

#### Urban-Rural: To Generate New Commitments between Citizens (URGENCI)

[www.urgenci.net](http://www.urgenci.net)

*Seeks to be a worldwide network for imparting information about consumer/producer and urban/rural relationships. Sponsored the "First International Symposium on Local Contracts between Farmers and Consumers" in February 2004 and has sponsored events biannually since then.*



# Research Bibliography

To what degree are CSAs meeting their economic and social goals?

## STUDIES THAT INCLUDE FINDINGS ON ECONOMIC GOALS

### NATIONAL STUDIES

Galt, Ryan E. 2011. Counting and mapping Community Supported Agriculture in the United States and California: Contributions from critical cartography/GIS. *ACME: An International E-Journal for Critical Geographies* 10 (2), 131–162. [www.acme-journal.org/vol10/Galt2011.pdf](http://www.acme-journal.org/vol10/Galt2011.pdf)

Lass, Daniel A., G. W. Stevenson, John Hendrickson, and Kathy Ruhf. 2003. *CSA Across the Nation: Findings from the 1999 CSA Survey*. Madison, WI: Center for Integrated Agricultural Systems (CIAS), University of Wisconsin-Madison. [www.cias.wisc.edu/economics/csa-across-the-nation-findings-from-the-1999-and-2001-csa-surveys/](http://www.cias.wisc.edu/economics/csa-across-the-nation-findings-from-the-1999-and-2001-csa-surveys/)

### REGIONAL STUDIES

Galt, Ryan E., Jessica Beckett, C. C. Hiner, and L. O'Sullivan. 2011. *Community Supported Agriculture (CSA) in and around California's Central Valley: Farmer and Farmer Characteristics, Farm-member Relationships, Economic Viability, Information Sources, and Emerging Issues*. Davis, CA: University of California, Davis. [asi.ucdavis.edu/resources/publications/Galt%20et%20al%20%202011-CSA%20Report.pdf](http://asi.ucdavis.edu/resources/publications/Galt%20et%20al%20%202011-CSA%20Report.pdf)

Oberholtzer, Lydia. 2004. *Community Supported Agriculture in the Mid-Atlantic Region: Results of a Shareholder Survey and Farmer Interviews*. Stevensville, MD: Small Farm Success Project. [www.smallfarmsuccess.info/CSA\\_Report.pdf](http://www.smallfarmsuccess.info/CSA_Report.pdf)

Ostrom, Marcia R. 1997. *Toward a Community Supported Agriculture: A Case Study of Resistance and Change in the Modern Food System*. Doctoral thesis, Land Resources, University of Wisconsin, Madison. [www.worldcat.org/title/toward-a-community-supported-agriculture-a-case-study-of-resistance-and-change-in-the-modern-food-system/oclc/40604104](http://www.worldcat.org/title/toward-a-community-supported-agriculture-a-case-study-of-resistance-and-change-in-the-modern-food-system/oclc/40604104)

Perez, Jan. 2004. *Community Supported Agriculture on the Central Coast: The CSA Grower Experience*. Research Brief #4, Winter. Santa Cruz: Center for Agroecology and Sustainable Food Systems. [casfs.ucsc.edu/about/publications/research-briefs.html](http://casfs.ucsc.edu/about/publications/research-briefs.html)

Sanneh, Njundu, L. Joe Moffitt, and Daniel A. Lass. 2001. Stochastic efficiency analysis of community-supported agriculture core management options. *Journal of Agricultural and Resource Economics* 26 (2): 417-430. [www.google.com/search?client=safari&ls=en&q=Stochastic+efficiency+analysis+of+community-supported+agriculture+core+management+options&ie=UTF-8&oe=UTF-8](http://www.google.com/search?client=safari&ls=en&q=Stochastic+efficiency+analysis+of+community-supported+agriculture+core+management+options&ie=UTF-8&oe=UTF-8)

## STUDIES THAT INCLUDE FINDINGS ON SOCIAL GOALS

Allen, Patricia, Julie Guthman, and Amy Morris. 2006. *Meeting Farm and Food Security Needs through Community Supported Agriculture and Farmers' Markets in California*. Research Brief #9. Santa Cruz: Center for Agroecology and Sustainable Food Systems. [casfs.ucsc.edu/about/publications/research-briefs.html](http://casfs.ucsc.edu/about/publications/research-briefs.html)

Cone, C. A., and A. Myhre. 2000. Community-supported agriculture: a sustainable alternative to industrial agriculture? *Human Organization* 59 (2): 187-197. [faculty.morris.umn.edu/~cholledl/anth%203204/Class%20Presentations.08/Community%20Supported%20Agriculture.pdf](http://faculty.morris.umn.edu/~cholledl/anth%203204/Class%20Presentations.08/Community%20Supported%20Agriculture.pdf)

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#### **OTHER ARTICLES SUMMARIZING LARGE MEMBER SURVEYS**

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Kane, Deborah J., and Luanne Lohr. 1997. *Maximizing Shareholder Retention in Southeastern CSAs*. Santa Cruz, CA.: Organic Farming Research Foundation. [newfarm.rodaleinstitute.org/features/0403/csa\\_resource\\_list.shtml](http://newfarm.rodaleinstitute.org/features/0403/csa_resource_list.shtml)

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Kolodinsky, Jane M., and Leslie L. Pelch. 1997. Factors influencing the decision to join a CSA farm. *Journal of Sustainable Agriculture* 10 (2-3): 129-141. [lilt.ilstu.edu/staylor/csdc/articles/Volume10/Kolodinsky%20et%20al%201997.pdf](http://lilt.ilstu.edu/staylor/csdc/articles/Volume10/Kolodinsky%20et%20al%201997.pdf)

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#### **COST COMPARISONS BETWEEN CSA SHARES AND OTHER RETAIL ESTABLISHMENTS**

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# CSA History

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# Lecture 1: History of Community Supported Agriculture

## A. Introduction

In its first decade of introduction into the United States, community supported agriculture (CSA) efforts followed roughly the same form. Farmers and/or communities formed a cooperative agreement whereby the community would share in the risk of the farmer, experiencing the abundance of some seasons and supporting the business through scarce times. Often, members of the CSA would form a “core group,” volunteering to take on important roles within the CSA management. In some cases, farmers made their finances transparent so that communities could cover the true cost of producing their food while supporting the farmer making a decent income.

As time has progressed the CSA movement has swept from the East to the West coast in the U.S., and both the number of farms and number of consumers participating in CSA have continued to expand. The expansion of the movement has now spanned nearly three decades and has witnessed a grand shift in the conceptualization of what constitutes community supported agriculture.

Although some farms still practice what’s now known as the *Membership or Share model* first envisioned by the founder of the American CSA movement Robyn Van En, farmers, businesses, and communities now call many things CSA. These include a more customer-oriented *Subscription CSA*, in which customers sign up weekly, monthly, quarterly, or seasonally to receive boxes of produce from one or multiple farms. The Subscription CSA diverges from Van En’s idea of CSA because in most cases subscribers do not share in the risk of the farming operation and contribute little to no labor on the farm. The subscription model, among others described in this unit, enabled the movement to reach more members, many of whom reside in cities and would not otherwise be able to participate in Van En’s more hands-on approach to CSA (although some city-based CSAs also feature a hands-on component).

## B. Philosophy and Definition of Community Supported Agriculture

### 1. Community Supported Agriculture defined

Up until the early 2000s, CSA was primarily conceptualized as a direct marketing partnership between a farmer or farmers and a committed network of community members/consumers who help to provide a portion of a given farm’s operating budget by purchasing “shares” of the season’s harvest in advance of the growing season

In its initial form, CSA shareholders made a commitment to support the farm financially (and/or through other roles) throughout the growing season, thereby assuming some of the costs and risks along with the grower. The two primary tenets of CSA as originally conceived were: Shared Risk, and Upfront Seasonal Payment.

- a) However, the types of arrangements in CSAs between consumer and producer have changed substantially since first envisioned, and, over the last decade, many farms have ceased to adhere strictly to the original tenets of CSA
  - i. Many CSA projects no longer require season-long, nor half-season, nor quarter-season payments, but have transitioned instead to monthly or even weekly payments from consumers
  - ii. Many CSAs no longer share the risk of crop failure with consumers, choosing instead to purchase goods from other farmers when their farm experiences crop failure and the CSA box falls short of expectations. This form of CSA puts the burden on the grower to provide more service in order to stay competitive, while diminishing the opportunity for consumers to take responsibility for their food supply.

- iii. Many CSAs have lost the “community” aspect of Community Supported Agriculture, instead experiencing the programming as a (albeit enhanced) consumer experience
- 2. The intended outcome of all types of CSA relationships
  - a) Greater economic viability for the farmer: Through community member commitment, CSA relationships may help to ensure the economic viability of regional agriculture by assuring regional direct market outlets for smaller-scale producers/growers unable or disinterested in competing in the wholesale produce market. CSA share prices are often a compromise between wholesale prices and retail prices, thereby giving consumers a bargain while giving the farmer a larger share of the food dollar than selling through a middleman.
    - i. If shares are sold before the season, the farmer has increased revenue at the beginning of season when input costs are high and the farmer may also have a sense of the amount to plant ahead of season as the produce has been pre-sold
  - b) Increased consumer contact with agriculture and therefore awareness of and appreciation for farmland and for the growing practices used
  - c) Increased awareness and appreciation of seasonal limitations of regional food production
  - d) Increased consumer awareness of differences in food quality
  - e) The development of personal relationships between growers and community members
  - f) Environmental soundness of farming practices
    - i. CSA and land use practices: The majority of CSA programs use certified organic, biodynamic, or similar farming practices that restrict the use of synthetically compounded fertilizers and pests control agents known to pose environmental quality and human health risks. Recently in the Northeast, the younger generation of some conventional family farms has initiated CSA projects as a way to stay in farming, and is willing to consider reducing chemical use in order to do so.
    - ii. CSA, cropping diversity, and pest management: In order to provide for the seasonal fresh fruit and vegetable needs of shareholders, a large variety of crops are typically grown, which also encourages pest and disease prevention
    - iii. Financial support for the adoption of conservation farming practices: In the case of the Membership/Share Model (see section D.4.a ) a farmer may make his or her true costs of production known to a potential shareholder group, and may be fairly compensated for adopting specific conservation farming practices, allowing the grower to internalize the true costs of production
    - iv. Food miles reduction: CSA distribution usually takes place within a 100-mile radius more or less; global food miles average 1500 miles
  - g) CSA programs’ contribution to social justice and community development: In the Membership/Share Model (section D.4.a ), a farmer may make the true costs of production known to a potential shareholder group, and may be fairly compensated for specific social services provided by the farm
    - i. Examples of social services provided by CSA farms
      - Limited-income shares partially or wholly subsidized by shareholders, community members
      - Donations of excess produce and/or gleaning programs with food banks and anti-hunger organizations
      - Environmental and agricultural education for the community
      - Fair employee/labor compensation practices: A living wage plus health insurance and retirement fund for farmers
      - Seasonal community celebrations (e.g., harvest festivals)

## C. History of Community Supported Agriculture:

The independent development of the CSA model in Japan and Europe

1. The development of CSA in Japan
  - a) Japanese food scares prompt sharp increase in demand for domestically produced and “natural” or certified organic foods
    - i. “Minimata Disease” – Kumamoto, Japan (c: 1955). Over 3,000 victims of methyl mercury poisoning resulting from the dumping of an estimated 27 tons of industrial mercury compounds into Minamata Bay between 1932 and 1968 (see: [www1.american.edu/ted/MINAMATA.HTM](http://www1.american.edu/ted/MINAMATA.HTM)).
    - ii. Concern over radioactive contamination of food products following Chernobyl nuclear power plant accident of 1986
    - iii. Agricultural trade imbalances between Japan and other nations threaten Japanese agricultural economy
    - iv. Labeling frauds for organic foods stimulate increase in direct market relationships
  - b) The Cooperative movement in Japan and the development of CSA (see: [uwcc.wisc.edu/icic/today/consumer/move.html](http://uwcc.wisc.edu/icic/today/consumer/move.html))
    - i. A long history of cooperatives – First co-ops were established in 1897
    - ii. Many consumers were drawn to the co-ops in the 1960s and 1970s because of their stated objective of providing “safe, affordable and reliable foods” to their members
    - iii. Today 22 million co-op members (30% percent of all Japanese households) are involved in the Japanese Consumers’ Co-operative Union, the largest consumer organization in the country (see: [community-wealth.org/content/japanese-consumers-co-operative-union-english-language-site](http://community-wealth.org/content/japanese-consumers-co-operative-union-english-language-site))
    - iv. Co-ops are engaged in a wide array of mutual help activities covering all aspects of daily living including: medicine, insurance, housing, and education
    - v. Most of Japan’s CSA programs have been organized between existing cooperatives of producers/farmers and consumers
    - vi. CSA relationships are strongly supported by Japanese co-op members as they allow for more direct communication with the producers on how foods are produced, thereby allowing members to gauge food safety and the soundness of agricultural practices for themselves
  - c) Teikei system – Teikei in Japanese means “cooperation,” “joint business,” or “link up.” In reference to CSA, it is commonly translated as “food with the farmer’s face on it” (see: [www.joaa.net/English/teikei.htm](http://www.joaa.net/English/teikei.htm))
    - i. The Teikei system (c. 1970): Producer-consumer co-partnerships were developed by a small group of Japanese women concerned with food safety, pesticide use, processed and imported foods, and the corresponding decrease in the regional small-scale farming population in Japan
    - ii. Primary objectives of Teikei
      - Create an alternative distribution system independent of the conventional produce market
      - Develop a mutual understanding of the needs of both producers and consumers
      - Develop a better way of life through mutually supportive producer/consumer interactions and cooperation
    - iii. Teikei list of ten principles: See Appendix 1, Ten Founding Principles of the Teikei System
  - d) Japan Organic Agricultural Association (JOAA; see: [www.joaa.net/English/teikei.htm](http://www.joaa.net/English/teikei.htm))



- i. Established in 1971 in response to a period of unprecedented economic growth, rapid industrialization, and subsequent concerns over environmental quality and human health impacts from agriculture
  - ii. An estimated 3,000 members in association: 20–25% growers, 80% consumers
  - iii. Producers and consumers share objective of expanding the organic agriculture movement through mutual support
2. The development of CSA in Europe
- a) The influence of Rudolf Steiner (1861–1925) on European agriculture, education, medicine, the arts, religion, and economics, 1930s–1970s (see: [www.biodynamics.com/steiner.html](http://www.biodynamics.com/steiner.html))
    - i. The development of Biodynamic farming (see: [www.biodynamics.com/biodynamics.html](http://www.biodynamics.com/biodynamics.html))
      - Agriculture movement that seeks to “...actively work with the health-giving forces of nature”
      - A world-wide agricultural movement with strict production standards and independent certification through the Demeter Association (see: [www.demeter-usa.org/](http://www.demeter-usa.org/))
    - ii. Waldorf education (see: [www.whywaldorfworks.org/?src=awsna.org/index.html](http://www.whywaldorfworks.org/?src=awsna.org/index.html))
    - iii. Anthroposophy (see: [www.anthroposophy.org](http://www.anthroposophy.org))
    - iv. Camp Hill Communities: Social renewal and community building through working with populations of developmentally delayed children and adults (see: [www.camphill.org](http://www.camphill.org))
    - v. Threefold Commonwealth: New forms of economic development intended to define desirable economic outcomes and direct economic life in a conscious, human way while resisting the temptation to defer to market forces alone
  - b) The influence of Rudolf Steiner’s thinking on small-scale agricultural economics: “The associative approach” to economics
    - i. Associative Economics: Economic arrangement that fosters interaction among producers, traders, creditors, and consumers and where appropriate price, true human needs, the eradication of poverty, greater social equity, and environmental impacts are explicitly addressed in the process (see: [www.cfae.biz/associative-economics/rudolf-steiner/](http://www.cfae.biz/associative-economics/rudolf-steiner/); [www.goetheanum.org/Rudolf-Steiner-Associative-Economics.4437.0.html](http://www.goetheanum.org/Rudolf-Steiner-Associative-Economics.4437.0.html))
    - ii. Examples of associative economics: Gemeinnützige Landbau-Forschungsgesellschaft (LBF) in Germany
      - Creating equitable partnerships through new forms of land tenure. Carl-August Loss and Trauger and Hans Groh establish community land trust, Gemeinnützige Landbau-Forschungsgesellschaft (LBF), through personal donations of land and capital (1968).
      - Carl-August Loss and Trauger Groh establish Buschberghof farm on LBF lands (1968)
      - Objectives of Landbau-Forschungsgesellschaft (LBF)
        - Hold title to agricultural lands and make them available through leases to biodynamic farmers, in perpetuity
        - Eliminate owner privileges/power imbalances in agricultural partnerships where one partner holds title
        - Protect agricultural lands from development by removing land from speculative real estate market

- Replace the old systems of employers and employees by encouraging cooperative and equitable partnerships
  - Creating new forms of financial cooperation: Landwirtschaftliche Arbeitsgemeinschaft (LAG). Carl August and Trauger Groh establish “Agriculturally Cooperating Community,” a network of non-farming community members who support farmers through providing loans to active LBF farmers who no longer qualify for conventional bank loans without the equity conveyed through private land ownership.
- iii. European CSA relationships develop from multiple models and influences
  - Jan Vander Tuin travels through Switzerland and Germany to study associative economic relations in agriculture
  - Producer-consumer food alliance in Geneva, Switzerland inspired by co-operative movement in Chile during Allende Administration (1970–1973)
  - Jan Vander Tuin helps to found CSA farm (Topinambur) in Zurich, Switzerland (1984)
  - LAG members in Germany became customers of farms, creating proto-CSA (1985)
  - LAG members and Carl-August hear of CSA scheme begun at Temple Wilton Farm (USA) and begin discussions of starting a CSA at Buschberghof (1987)
  - As the CSA model developed and more consumers became shareholders, adequate start-up capital was provided by the CSAs, making the LAG obsolete
  - Wolfgang Stranz adopted Trauger Groh’s system of CSA, developed on The Temple Wilton Community Farm, on Buschberghof (1988)

#### **D. The History of Community Supported Agriculture in North America**

(see: [newfarm.rodaleinstitute.org/features/0104/csa-history/part1.shtml](http://newfarm.rodaleinstitute.org/features/0104/csa-history/part1.shtml))

1. Indian Line Community Farm
  - a) Jan Vander Tuin brings the concept of CSA to North America from Europe. Introduces the idea to Robyn Van En at Indian Line Farm in South Egremont, Massachusetts and Susan Witt, director of the E. F. Schumacher Society (1984). CSA is seen as a way to integrate Schumacher’s and Steiner’s ideas.
  - b) Robyn Van En, Jan Vander Tuin, John Root, Jr., and Charlotte Zaneccchia form core group to begin first CSA with a small apple orchard operation
  - c) With Hugh Ratcliffe, Indian Line Community Farm begins to offer shares in vegetable harvests (1986)
  - d) Within four years, the Indian Line CSA expands from 30 to 150 members
  - e) Robyn Van En drafts pamphlet: “Basic Formula to Create Community Supported Agriculture” (1992); produces video: “It’s Not Just about Vegetables” (1992); and founds CSA North America (CSANA), a nonprofit clearinghouse supporting CSA development (1992)
2. Temple-Wilton Community Farm, New Hampshire (see: [www.templewiltoncommunityfarm.com](http://www.templewiltoncommunityfarm.com))
  - a) Started by Anthony Graham, Trauger Groh, and Lincoln Geiger (1986). Inspiration for the Temple-Wilton farm came out of discussions with Trauger Groh about Rudolf Steiner’s anthroposophical writings, associative economic models in Germany, and from the model of the Camphill Village in Copake, New York.
3. East Coast CSA movement
  - a) From the mid 1980s to the present, the number of CSAs on the East Coast has continued to grow steadily, with a large surge in CSA interest between 2004–2008
  - b) Examples of East Coast CSA farms
    - i. Roxbury Farm NY ([www.roxburyfarm.com](http://www.roxburyfarm.com))
    - ii. Peacework Organic CSA (formerly Genesee Valley CSA) ([www.peaceworkcsa.org](http://www.peaceworkcsa.org))

iii. CSA in NYC ([www.justfood.org/csa/csa-in-nyc](http://www.justfood.org/csa/csa-in-nyc))

#### 4. CSA spreading West

##### a) Midwest hubs for Community Supported Agriculture

- i. In Wisconsin, the first CSA projects began near Milwaukee and the Twin Cities in 1988
- ii. Many CSA farms have formed associations or networks to exchange information and ideas, educate consumers, and support new or struggling farms (Fair Share Coalition is a large group of Midwest CSAs that work together; [www.csacoalition.org](http://www.csacoalition.org))

##### iii. Examples of Midwest CSAs

- Angelic Organics, Caledoni, IL (serving the Chicago area) ([www.AngelicOrganics.com](http://www.AngelicOrganics.com))
- Common Harvest Farm, Osceola, WI ([www.commonharvestfarm.com](http://www.commonharvestfarm.com))
- Gardens of Eagan, Northfield, MN ([www.gardensofeagan.com/farmers\\_market\\_csa.php](http://www.gardensofeagan.com/farmers_market_csa.php))

##### b) Examples of Community Supported Agriculture on the West Coast

- i. Live Power Community Farm in Covelo, California—the first CSA in California. Horse-powered farm delivering vegetables and fruits to the Bay Area core group ([www.livepower.org](http://www.livepower.org)).
- ii. Full Belly Farm, Capay Valley, California ([www.fullbellyfarm.com](http://www.fullbellyfarm.com))
- iii. Live Earth Farms, Corralitos, California, started in 1995 ([www.liveearthfarm.com](http://www.liveearthfarm.com))
- iv. Eatwell Farm, Winters, California ([www.eatwell.com](http://www.eatwell.com))
- v. Homeless Garden Project, Santa Cruz, California ([www.homelessgardenproject.org](http://www.homelessgardenproject.org)). The Homeless Garden Project, founded in 1990, provides job training and support for the homeless population of Santa Cruz.
- vi. UCSC CASFS Farm & Garden CSA, Santa Cruz, California ([casfs.ucsc.edu/community-outreach/produce-sales/community-supported-agriculture](http://casfs.ucsc.edu/community-outreach/produce-sales/community-supported-agriculture)). Organic horticulture and agriculture training program located at the University of California, Santa Cruz, providing instruction in CSA production and management. The CSA project was started in 1995.
- vi. Gathering Together Farm, Philomath, OR ([www.gatheringtogetherfarm.com](http://www.gatheringtogetherfarm.com))
- vii. The Root Connection CSA, Woodinville, WA ([www.rootconnection.com](http://www.rootconnection.com))

### E. The CSA Movement in North America: What is Happening to CSAs?

1. Recent research on CSA projects suggests that the number of CSAs experienced moderate but steady growth from their inception in the North America until 2004. At this time the local food movement began to take off, as did memberships in existing CSAs and the development of new CSAs. Regional studies indicate that between 2004–2013, CSA membership and CSA farm operations expanded dramatically, curtailed only by the U.S. financial recession in 2008. In interviews, long-time CSA farmers in California describe increased competition from newer CSAs in areas where the local food movement has grown (see Galt et. al 2011 in Resources section of Unit 3.0, Introduction to Community Supported Agriculture).
  - a) Farms also report increasing competition from “Box Schemes” (produce distribution companies representing themselves as CSAs), particularly in urban areas. Many have home delivery.
2. The form of CSA projects has diverged widely from the form described by Robyn Van En and other writing in the early 1990s. Known types of CSAs now include:
  - a) Membership/Share Model CSAs: Van En-style community-driven CSA. Involves a “core group” that helps facilitate the CSA, shared risk of crop failure between farm and member, can be started by either farmer or by members, longer membership periods (.5 year, 1 year), rare on the West coast. This type of CSA usually involves a single farm rather than multiple farms.

- b) Subscription CSA: Farmer initiated, includes a subscription to the farm, length of subscription varies widely; anywhere from a one-box/one-week commitment, to a full-year subscription. Generally, one farm is involved in this type of CSA, however many farms supplement their boxes with produce or items from other farms. Multiple-Farm CSAs also exist in the subscription model, where several farms will join together to produce one box. Farms also may offer additional subscriptions for other farms' honey, eggs, meat, etc. Subtypes include:
    - i. Single Farm Subscription Farm
    - ii. Multi-Farm Subscription farm
  - c) Box-Scheme: Not to be confused with the name of a CSA in the UK, in North America a "Box-Scheme" is coming to be known as the term for CSAs that are not farm-based, but rather are businesses that aggregate the majority of their produce from other sources and (mis)label it a CSA. Box-schemes use the concept of CSA as a marketing device for what is essentially a produce-distribution company.
3. Yearly membership turn-over for all type of CSAs, both in times of expansion and not, continue to be a major challenge for CSA farms. CSA farms of all types and sizes report needing to replace 20–30% of membership every year.
  4. Nationally, the number of CSA farms is in constant flux, as farms decide to begin to use CSA as a marketing method, while other farms decide CSA doesn't work for their operation and/or do not survive as a business. While it is difficult to know the exact number of CSAs in North America, author Steven McFadden estimates there are approximately 6,000–6,500 CSA farms after conversations with a range of knowledgeable sources including Elizabeth Henderson, author of *Sharing the Harvest*; Erin Barnett of *LocalHarvest.org*; Professor Ryan Galt at UC Davis; and Jill Auburn, Senior Advisor for the USDA's Ag Systems (see [thecalloftheland.wordpress.com/2012/01/09/unraveling-the-csa-number-conundrum](http://thecalloftheland.wordpress.com/2012/01/09/unraveling-the-csa-number-conundrum)).
  5. In California, farms of all sizes reported an inability to grow CSA membership since the 2009 season, due to losing members and needing to replace them, as well as increased competition from Box Schemes and other CSAs (Galt et al. 2011)
  6. CSA farmers in America tend to be more youthful and well educated than the average farmer (Lass et al. No Date; see: [www.cias.wisc.edu/wp-content/uploads/2008/07/csa\\_survey\\_01.pdf](http://www.cias.wisc.edu/wp-content/uploads/2008/07/csa_survey_01.pdf))
  7. Nationally, most CSA farms manage their land organically or biodynamically (Lass et al. No Date), although only about half are certified organic or biodynamic
  8. Nationally, most CSA farms use other forms of marketing in addition to CSA (retail to restaurants, wholesale, and farmers' markets are most common). (Lass et al. No Date)
  9. Nationally, the "majority of the farmers surveyed felt the CSA improved their ability to meet farm costs, their own compensation, their quality of life, their ability to maintain and improve soil quality and community involvement" (pg. iii Lass et al. No Date)
  10. The CSA movement in North America is currently figuring out how to define itself so as to maintain some integrity of the originating concepts of CSAs within the rapidly expanding number of businesses claiming that they are CSAs
    - a) In 2013 California became the first state to enact legislation that defines and regulates CSAs under direct marketing regulations (see Appendix 2, California's Legal Definition of Community Supported Agriculture)

## F. The Developing International CSA Movement

1. The term CSA is mostly used in the USA but a variety of similar production and marketing systems are in use worldwide:
  - Association pour le maintien d'une agriculture paysanne (AMAP) in France
  - Agriculture soutenue par la communauté (ASC) in Québec

- Teikei in Japan
  - Reciproco in Portugal
  - Solidarische Landwirtschaft in Germany
  - Andelslandbruk in Norway
  - Gruppi di Acquisto Solidale (GAS) in Italy (see also, Ethical purchasing groups)
  - Съпричастно земеделие in Bulgaria
  - Asociația pentru Susținerea Agriculturii Țărănești (ASAT) in Romania
  - Grupa solidarne razmjene (GSR) in Croatia
2. Urban-Rural Generate New Commitments between Citizens (URGENCI) – Seeks to be a worldwide network for imparting information about consumer/producer and urban/rural relationships ([www.urgenci.net/index.php?lang=en](http://www.urgenci.net/index.php?lang=en)). URGENCI sponsored the “First International Symposium on Local Contracts between Farmers and Consumers” in February 2004 in France, and has met biennially since, the last of which was at Asilomar Conference Center in Pacific Grove, California 2013; the next international symposium is scheduled to take place in China in 2015.

### **G. How Well Are CSA Programs Meeting Their Goals?**

1. While CSAs continue to be a small sector of the North American produce market, they continue to connect producers and consumers, educating the public about organic agriculture and the importance of eating locally
2. As voiced at the 2013 URGENCI conference, CSAs struggle to reach out to the broader U.S. population, and feel at times that they are preaching to the converted
3. Farms operating CSAs report having higher incomes than those of similar size and sale not operating CSAs; they also report a greater connection to their community and increased satisfaction with their life-work
4. The divergence from CSA as a philosophy of farming in its inception to its current conceptualization as a marketing strategy has watered down many of the community-oriented goals
5. The majority of CSA farms, regardless of size, philosophy, or type, continue to use agro-ecological farming methods, thereby reaching many of the environmental protection goals

# Appendix 1: The Ten Founding Principles of the Teikei System in Japan

## 1. Principle of Mutual Assistance

The principle of mutual assistance is intended to direct both consumers and producers toward a mutually supportive and beneficial relationship based on a shared understanding of each other's needs and desires.

## 2. Principle of Intended Production

The principle of intended production is intended to guide growers to produce the maximum diversity and highest quality of produce within the production capacities of the farm unit.

## 3. Principle of Accepting the Produce

This principle encourages consumers to accept the produce that has been grown in accordance with the previous consultations between growers and consumers; their diet should depend as much as possible on the produce provided.

## 4. Principle of Mutual Concession in the Price Setting Decision

This principle encourages the use of full disclosure and an open discussion of the true costs and benefits of CSA for both producer and consumer when establishing the price of a given CSA share.

## 5. Principle of Deepening Friendships

Founded on the assumption that enduring partnerships require true friendships, the principle of deepening friendly relationships encourages frequent contact among CSA members and producers.

## 6. Principle of Self-distribution

This principle encourages reliance on the producer or shareholders for the distribution of CSA shares and discourages the use of professional transporters.

## 7. Principle of Democratic Management

The principle of democratic management encourages both producer and consumers to practice democratic decision making with shared responsibilities.

## 8. Principle of Learning Among Each Group

This principle encourages the continued development of friendship and non-material culture, in order to avoid the tendency for CSA to devolve into an exclusively commodity/trade-based relationship.

## 9. Principle of Maintaining the Appropriate Group Scale

As the size (or scale) of the producer or consumer groups will determine the ability of the above practices to be maintained, the principle of maintaining the appropriate group scale encourages the limitation of scale to appropriate levels.

## 10. Principle of Steady Development

The principle of steady development encourages the continued effort of engaging in mutual cooperation in order to achieve satisfactory conditions for both producer and consumer groups.

Adapted from *Sharing the Harvest: A Guide to Community Supported Agriculture*, by Elizabeth Henderson and Robyn Van En. Chelsea Green Publishing Co., 2007.

# Appendix 2: California's Legal Definition of Community Supported Agriculture

## **Assembly Bill No. 224: Agricultural Products: Direct Marketing: Community Supported Agriculture**

### **CHAPTER 404**

An act to amend Section 47000 of, and to add Article 6 (commencing with Section 47060) to Chapter 10.5 of Division 17 of, the Food and Agricultural Code, and to amend Section 113735 of the Health and Safety Code, relating to agricultural products.

Approved by Governor Jerry Brown, September 28, 2013. Filed with Secretary of State September 28, 2013.

### **Article 6. Community-Supported Agriculture 47060.**

For purposes of this article, the following definitions apply:

(a) "Community-supported agriculture program" or "CSA program" means a program under which a registered California direct marketing producer, or a group of registered California direct marketing producers, grow food for a group of California consumer shareholders or subscribers who pledge or contract to buy a portion of the future crop, animal production, or both, of a registered California direct marketing producer or a group of registered California direct marketing producers.

(b) "Single-farm community-supported agriculture program" means a program in which all delivered farm products originate from and are produced at the farm of one registered California direct marketing producer, and no more than a de minimus amount of delivered farm products originate at the farms of other registered California direct marketing producers.

(c) "Multi-farm community-supported agriculture program" means a program in which all delivered farm products originate from and are produced at one or more farms of a group of registered California direct marketing producers who declare their association as a group at the time of their annual certification or by amending the annual certification during the year.

(d) "Farm" means a farm operated by a registered California direct marketing producer or a group of registered California direct marketing producers.

*The bill's complete language is available here: [caff.org/wp-content/uploads/2012/06/ab\\_224\\_bill\\_20130928\\_chaptered1.pdf](http://caff.org/wp-content/uploads/2012/06/ab_224_bill_20130928_chaptered1.pdf)*

# CSA Structure and Organization

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# Lecture 1: CSA Structure & Organization

## A. The Organization of Community Supported Agriculture Operations

1. Types of CSA organization (see also Unit 3.1, History of CSA, page 57)
  - a) Membership/Share Model CSA: Community-driven CSA. Involves a “core- group” that helps facilitate CSA, more shared cost between farm and member, can be started by farmer or by members, longer membership periods (.5 year, 1 year), currently rare on the West coast. Usually, only a single farm is involved in this type of CSA (rather than sourcing from multiple farms).
  - b) Subscription CSA: Farmer-initiated, includes a subscription to the farm, length of subscriptions vary widely; anywhere from a one box/one week commitment, to a full-year subscription. Generally one farm is involved in this type of CSA, however many farms supplement their boxes with produce or items from other farms. Multiple-Farm CSAs also exist in the subscription, where several farms will get together to produce one box. Farms also may offer additional subscriptions for other farms honey, eggs, meat, etc.  
Subtypes:
    - i. Single Farm Subscription Farm (one farm that’s growing produce)
    - ii. Multi-Farm Subscription farm (collaborative amongst farms)
  - c) Box-Scheme: Not to be confused for the common name of a CSA in the UK, in North America a “Box-Scheme” is coming to be known as the term for CSAs that are not farm-based, but rather are businesses that aggregate the majority of their produce from other sources and (mis)label it a CSA
  - d) Farm-stand CSA, Farmers’-Market CSA: Some farms give a 10% discount at their farm stand or farmers’ market stall to consumers that pay for a “share” at the beginning of the season. For example, a consumer pays \$300 at the beginning of the season for a line of credit at the farm stand or farmers’ market stall, the farmer in turn gives that consumer a 10% discount, or, \$330 worth of produce total.
  - e) Animal-Share: Legal agreement between farmer and consumer where the consumer “owns” part of an animal, and pays a monthly maintenance fee for food, housing, etc. In turn the consumer gets part of the animal product (milk, cheese, meat, etc.) that they own. Legal agreements creatively address laws against raw milk.
2. Potential roles and responsibilities within Community Supported Agriculture programs
  - a) Farmer/operator – Manages agricultural production system (e.g., crop planning; manages work crew; tractor work; engages in day-to-day field activities)
  - b) CSA manager – Manages public relations, share distribution, community outreach, billing, membership recruitment, newsletter production, special events coordination. A manager is recommended for all CSAs with more than 200 members.
  - c) Field crew/labor – Field work (tractor work, planting, irrigation, cultivation, harvest, and pack), distribution/delivery
  - d) Core group (Membership/Share Model only) – Averages 5–12 people and includes farmer(s) and CSA shareholders. May accept responsibilities including: administrative responsibilities (see CSA manager, above), special events/festivals, addressing legal issues, developing low-income share program, or contributions of expertise in any area (see Appendix 1, Core Group Responsibilities, for a sample of the roles filled by CSA core group members).

- e) Drop-site hosts – For farms that have off-site pick up locations for members (churches, personal residences, office building, etc.), a drop site host is a great way to maintain a constant connection to that location, some farmers choose to reward these hosts with a box in exchange for the use of the space. Farmers also testify that hosts often are great advocates for the CSA, and bring in new members
3. Variations and innovations on the Membership/Share and Subscription CSA model
    - a) Mixed vegetable CSA – Most common form of CSA, providing a wide diversity of fresh annual vegetables
    - b) Fruit and vegetable CSA – Many CSAs offer fresh fruit that is produced by the CSA farmers themselves, or through purchasing from other growers, as part of their shares (or as supplemental shares)
    - c) Grains, beans, seed CSA – A small number of CSAs offer rare varieties of fresh grains, beans, and seeds as part of their offerings
    - d) Meat, dairy, bread, and other products – Many CSAs purchase meat, dairy, and baked good from other producers and offer them as part of their shares or as “add-on shares.” Some CSA operations are now purchasing bulk food (e.g., tropical fruits) and food supplies from wholesale distributors and reselling these items to their shareholders in order to accommodate the “one-stop shopping” that many consumers prefer.
    - e) Multi-Farm CSA – Many CSA operations have teamed with producers of different crops to collectively supply the wide diversity of produce and other foods that consumers prefer
    - f) Full-diet CSA, offers all of the above (grains, beans, vegetables, dairy, meat, eggs, bread, flower bouquets, wine, etc.)

## **B. Challenges Commonly Faced by CSA Farms**

1. Production complexities – In order to provide for the desires of their shareholders, many CSA operations produce more than 30 different crops. This makes crop planning, cultivation, harvest, and crop rotation very complex and thus requires a great deal of knowledge and management oversight (see Unit 3.5, CSA Crop Planning).
2. Administrative complexities – Correspondence with consumers/members/shareholders, billing, distribution of shares, coordinating community support events, etc., all require significant amounts of time and skills in building a social organization
3. Turnover in consumers/members/shareholders – As CSA shareholders do not always continue from year to year, recruitment is an ongoing responsibility. Shareholder retention rate averages 60–70%.
4. Pressure of providing high quality and diversity in shares on a weekly basis
5. Customer preferences that lie outside the format of the CSA (e.g., more choices in crops)
6. Labor challenges – CSA farms are almost continually planting and harvesting a wide diversity of crops throughout the growing season. As with any fresh vegetable or fruit operation, harvesting, weed management, and post-harvest handling on a CSA farm represent a large proportion of total farm labor and require careful oversight.
7. Community involvement – Involving community members/shareholders in farm labor or activities requires additional training and management oversight
8. Land security – Like other forms of sustainable agriculture, which involve considerable investment of time, money, and materials, and investment in the development of soil fertility and infrastructure, CSA operations share the challenge of access to affordable lands close to urban areas where CSA farming usually thrives. Innovative ways of creating affordable and secure access to land are being developed and are addressed in Unit 9, Land Tenure Options.
9. CSA income and expenses

- a) Expenses – As CSA shares sold to members do not cover the cost of initial capital investment for farm equipment, CSA farmers will need to seek sources of financing (e.g., approach banks with business plan or make large purchases as they become possible within the farm budget) to cover major start-up costs
  - b) Income – Many CSA farmers report difficulties in receiving adequate returns for their labor, and lack adequate health care and retirement security. Farmers with larger CSAs report having larger and more stable incomes. Transparent budgeting and educating members about the true cost of production are essential in building a supportive and knowledgeable CSA project where the needs of both farmers and shareholders are met.
10. Competition from Box-Schemes – Farmers nationally have reported losing current and potential members to large-scale produce distribution operations

### **C. Community Supported Agriculture Training and Education Opportunities**

1. UCSC CASFS Farm & Garden Apprenticeship Program – Provides a six-month residential training program in organic farming and gardening. Includes CSA curriculum and training ([casfs.ucsc.edu](http://casfs.ucsc.edu)).
2. Michigan State Organic Training Program – Nine-month training on year-round CSA production (see: [www.msuorganicfarm.com/organic-farmer-training-program](http://www.msuorganicfarm.com/organic-farmer-training-program))
3. Sustainable Agriculture Education Association ([sustainableaged.org/Resources/AcademicPrograms/tabid/86/Default.aspx](http://sustainableaged.org/Resources/AcademicPrograms/tabid/86/Default.aspx))  
A comprehensive listing of colleges, Universities, and nonprofit organizations providing educational opportunities in sustainable agriculture
4. The Farm School, Massachusetts – Year-long organic farming and homesteading program ([www.farmschool.org](http://www.farmschool.org))
5. Collaborative Regional Alliance for Farmer Training (CRAFT) – CRAFT is a cooperative farmer-driven effort. CRAFT groups exist around the country. They are self-organized by farmers and/or apprentices to enhance educational opportunities for farm interns. Every other week from April through October, interns from all participating farms gather at one farm for a visit and/or workshop. Each visit includes an overview of the farm as well as a hands-on demonstration of one or two specific topics, including CSA-related topics.
6. Angelic Organics' CSA Learning Center – The CSA Learning Center is a nonprofit resource center (501(c)3) that provides opportunities for diverse community members, prospective farmers, and CSA shareholders from the greater Chicago area. Projects include youth education programs, models for developing low-income CSA shares, and technical assistance and training programs for regional producers ([www.csalearningcenter.org](http://www.csalearningcenter.org)).



# Appendix 1: Job Descriptions for the Genesee Valley Organic Community Supported Agriculture (GVOCSA) Core Group

The GVOCSA Core Group is a participatory 160-member CSA

## **ONE CLERK:**

- Keep minutes at monthly core group meetings
- Report on action items at end of meetings
- Check up with people who have accepted assignments

## **ONE REGISTRAR**

- Keep membership list up to date
- Serve as one of several contact people for information about CSA
- Prepare list of members for large/bulk mailing

## **EIGHT DISTRIBUTION COORDINATORS (4 COORDINATORS FOR EACH PICK-UP DAY)**

- Each coordinator covers 4 to 5 distribution days during the 26-week season
- Coordinator arrives early to distribution point to check distribution list from farm against boxes in cooler
- Oversee work of helpers who prepare bulk produce and boxes for pickup
- Check in members as they come for shares
- Collect money
- Distribute flyers or recipe sheets for the week
- Stock tables with vegetables for shares
- Break down, clean up, and return necessary materials to farm
- Submit bulk orders and payments to farm
- Assure coordination among other distribution coordinators
- Organize annual meeting to review procedures, train new coordinators

- Ensure necessary supplies (e.g., bags, boxes) are available; makes sure cooler is working properly
- Follow up on repeated no-shows for pick up
- Make sure leftover food goes to soup kitchen or local families

## **ONE WEBSITE MANAGER**

- Manage GVOCSA website: add and remove recipes and news, answer queries, add links, archive newsletters

## **TWO SCHEDULERS**

- Oversee member sign ups for work dates at farm and on distribution
- Prepare copy of schedules for mailing to members (members are responsible for finding replacements and trading work times; they are asked to inform the scheduler of changes made)
- Receive weekly attendance reports from farmers and distribution coordinators
- Reschedule members who miss work slots

## **ONE SPECIAL ORDER COORDINATOR**

- Arrange with other farms for additional products on need basis
- Prepare sign-up sheets so members can place orders
- Collect money and forward to farms
- Arrange for pick up and distribution of products

## **TWO TREASURERS**

- Set up bookkeeping system
- Collect deposits from members before season begins
- Prepare member contracts
- Help new members fill out contracts

- Collect payments and deposit in bank account
- Put up reminders when payments are due
- Pay farmers
- Pay bills for Core and distribution expenses
- Arrange for scholarships for members who need them
- Make monthly reports to Core on state of finances
- Prepare end-of-season financial report

#### **ONE FARMER**

- Report to monthly Core meetings on what has been happening at the farm
- Represent the farm at Core meetings

#### **TWO NEWSLETTER EDITORS**

- Collect articles, recipes, jokes and announcements for bimonthly issues of newsletter
- Format, copy and mail/e-mail newsletter to members
- Oversee big annual mailing of beginning-of-season information to members

#### **TWO OUTREACH COORDINATORS**

- Design outreach plan for recruiting new members
- Oversee mailing of annual letter with 3 CSA brochures to each member
- Write press releases for church, temple, environmental groups' newsletters
- Make presentations on CSA at meetings, or arrange for farmers to do so
- Line up media opportunities for farmers to publicize CSA
- Make special efforts to recruit low-income members

#### **ONE WINTER SHARE COORDINATOR**

- Sign members up for winter shares
- Arrange for distribution site
- Hold meeting with members who sign up
- Recruit helpers for distribution from among members buying winter shares
- Oversee food delivery to site, distribution, and clean up

#### **ONE NEW MEMBER COORDINATOR**

- Identify new members who need guidance of experienced member
- Recruit experienced members and make pairs
- Twice during season, check in with experienced members to make sure pairs are functioning well
- Get report from pairs at end of season

#### **ONE SOCIAL COORDINATOR**

- Arrange for early-in-season picnic
- Arrange for a few people to bring snacks, provides nametags, and encourages members to linger and socialize at pick-up stations
- Organize end-of-season banquet

#### **ONE PHONE/ART PROJECT PERSON**

- Call members each week to remind them of distribution work
- Designs posters or signs when needed

#### **AD HOC CHILDREN'S COMMITTEE**

- Help farmers design and develop play area for children
- Collect toys for farm

# CSA Outreach

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# Lecture 1: CSA Outreach

## A. Member Recruitment Strategies

1. Forming a new CSA – Farmer seeking to build a membership (Subscription) or a farmer or community seeking to collaboratively form a CSA (Membership). See Appendix 1, Steps to Forming a CSA.
  - a) Both Subscription and Membership: Contact existing community groups—e.g., day care, faith communities, health clubs/gyms, social justice groups, agriculture organizations, schools and colleges, churches, environmental and consumer organizations, civic groups, natural food retailers, etc., with brochures describing your potential enterprise
  - b) Both Subscription and Membership: Use public media—Encourage newspaper articles, community TV and radio programs that address CSA as a topic and profile existing and forming CSAs
  - c) Membership only: Organize an exploratory meeting of prospective shareholders to present and discuss the following –
    - i. The social and environmental issues facing agriculture today
    - ii. What CSA is, how CSAs generally function, and how CSA attempts to address the social, economic, and environmental concerns in agriculture
    - iii. Define other potential consumers/CSA members in the community. What is their demographic profile? What are their food preferences?
    - iv. Assess community interest in supporting low-income households via donations to low-income CSA shares
    - v. Assess which fresh foods are culturally appropriate for the community
    - vi. What kind of CSA model/structure are community members interested in?
    - vii. Define which risks (due to crop failures/low yield) people are willing to take as CSA members
    - viii. Assess commitment level of assembled participants to join CSA
    - ix. Form core group to assist in additional recruitment (see below for information on core groups)
  - d) Membership only: Organize a subsequent meeting to discuss prospective shareholder preferences. Address the following topics –
    - i. What commodities does the community want the grower to produce?
    - ii. What type of production/land use practices does the community support (e.g., organic or biodynamic standards)?
    - iii. What types of labor compensation practices is the community willing to support?
    - iv. Will CSA shareholders contribute labor or other forms of work, and how will this affect share costs?
  - e) Membership only: Prepare proposal with budget to present to group based on group preferences
  - f) Membership only: Organize core group (or CSA coordinator) to –
    - i. Approve budget proposed by farmer

**Note:** As we have discussed earlier in this section, there are many ways to run a community supported agriculture effort. In this lecture we will explore CSA Outreach in regards to the two most common methods of running a CSA, a “Subscription Model” in which the farmer starts the CSA by advertising and acquiring members who do not help run the CSA, and a “Membership or Share Model” where community members come together to form a “core group” that helps the farmer operate the CSA.

- ii. Set fee policy, payment schedule, and collect dues
  - iii. Define location and timing of share distribution
  - iv. Define and coordinate member responsibilities
  - v. Recruit new/additional members through outreach, education, advertising
2. Recruiting and maintaining membership for an existing CSA: A necessity in all types of CSAs
- a) Give current members a price break for next season if they sign up in advance
  - b) Email existing members to spread the word to friends, family, co-workers, and neighbors; send them a PDF of a flyer that they can print and post
  - c) Request members send out emails, make phone calls, and/or help distribute flyers about the CSA
  - d) Get a newspaper reporter to do a story on the history of your CSA
  - e) Use community TV and radio to advertise your CSA
  - f) Flyer at gyms, schools, sympathetic businesses (bakeries and coffee shops), etc.
  - g) Advertise for a farm potluck/slideshow to attract new members and educate your audience about agriculture
  - h) Review and consider adding new drop sites to expand and change reach of CSA
    - i) Table at local colleges and/or county health and wellness events
    - j) Tie the CSA effort into a “wellness” effort. E.g., the FairShare CSA coalition in Wisconsin has teamed with local health insurance providers. The health plans offer rebates to subscribers who belong to CSAs to encourage healthy eating habits. For details see: [www.csacoalition.org/our-work/csa-insurance-rebate/](http://www.csacoalition.org/our-work/csa-insurance-rebate/).
    - k) This will take substantial time, who is going to do it? Consider paying a coordinator/staff person over the fall and winter for recruitment for CSAs over 200 people
3. CSA and low-income membership (see: [www.hungeractionnys.org](http://www.hungeractionnys.org/); The FairShare CSA Coalition website: [www.csacoalition.org](http://www.csacoalition.org/))
- a) Recruiting, funding sources, and fundraising
    - Easy:
      - i. CSA operating on a sliding scale with additional compensation by other members
      - ii. CSA fundraising events for low-income shares (e.g., part of Harvest Festival or Farm Dinner income)
    - Requires more coordination—consider doing with a coalition of CSAs:
      - iii. Revolving loan funds that allow farmers to be paid up front, with low-income CSA members paying back the sponsoring organization at an affordable weekly cost
      - iv. CSAs and Federal Food Stamp Program (SNAP/EBT)—Coalition or CSA farms can apply to become a SNAP Retailer and receive electronic bank transfer (EBT) funds direct to bank account. Recommendation: make your farmers’ market/farm stand/ CSA the same name and account. More information can be obtained here: [www.fns.usda.gov/operating-csa-and-snap-participation](http://www.fns.usda.gov/operating-csa-and-snap-participation)
  - b) Developing a low-income CSA membership program
    - Outreach:
      - i. Contact your county’s human resources division or organizations such as Women Infant and Children’s Supplemental Program (WIC) for information on determining eligibility for receiving low-income shares and for developing a low-income application form (see Appendix 2, Low Income CSA Member Application)
      - ii. Contact local food banks, senior citizen groups, homeless shelters, women’s centers, welfare programs, schools, etc., to explain your interest in developing a limited-income share program. Request information on funding sources.

- iii. Invite program directors of the above types of organizations to your farm for a potluck/slideshow/CSA presentation
- iv. Bring literature about CSA, your CSA brochure/flyers, and low-income application forms to public events (see Appendix 2, Confidential Low-Income CSA Membership Application)
- v. Get the word out through flyers, newspaper ads/articles, community TV, and radio to explain your low-income share program specifically
- vi. Contact other organizations for ideas on outreach strategies to households of all incomes. Examples include:
  - FairShare CSA Coalition ([www.csacoalition.org](http://www.csacoalition.org))
  - Just Food ([www.justfood.org](http://www.justfood.org))
  - Hunger Action Network ([www.hungeractionnys.org](http://www.hungeractionnys.org))
- c) Ways to subsidize
  - i. Organize fundraising events for low-income/scholarship shares and increase awareness about CSA and efforts to reach out to households of all incomes
  - ii. Include low-income donation program on CSA application forms
  - iii. Make CSA a sliding scale

## **B. CSA Brochures, Pledge Forms, Informational Flyers, and Web Pages**

See Appendix 3, UCSC Farm CSA Brochure and Pledge Form; Appendix 4, UCSC Farm General Information Flyer. For model CSA web sites, see Angel Organics, [www.angelicorganics.com](http://www.angelicorganics.com); Full Belly Farm, [fullbellyfarm.com](http://fullbellyfarm.com); Peacework Organic CSA, [www.peaceworkcsa.org](http://www.peaceworkcsa.org); and Live Earth Farm, [www.liveearthfarm.net/csa/about-our-csa-program/](http://www.liveearthfarm.net/csa/about-our-csa-program/))

1. Content: web pages, brochures, informational flyers should include –
  - a) Clearly defined vision/mission of the CSA
  - b) Description of your CSA
  - c) Who you are personally
  - d) Location of your farm(s)
  - e) Commitment you're asking for from potential shareholders
  - f) Definition of shares and how much food is provided
  - g) Price of share (full, half, per season, per month, per box, etc.)
  - h) Payment plan options
    - i) Contact information
    - j) Pickup times and days
    - k) Length of produce season
    - l) Event calendar
  - m) Volunteer opportunities
    - n) What one can expect in the CSA box throughout the season
    - o) Additional information: farm history and background, growing methods, crop harvest schedule, photographs and other artwork
2. How to distribute outreach materials
  - a) Distribute flyers to organizations (described above) with contact information to receive formal brochure with additional information and pledge form
  - b) Web and Facebook sites
  - c) Farmers' markets (keep a sign-up list at your sign for people who are interested and would like to know more)
  - d) Informational meetings

### 3. Layout/Design

- a) Get help from your members: This can be considered one of the core group tasks and/or a member could do this work in exchange for a share

## C. CSA Newsletters (Recommended for all types of CSAs; see Appendix 5, Examples of CSA Newsletters)

1. Purpose and content: Fundamentally, to get people engaged with and excited about your farm!
  - a) Communicate with members about farm events and progression of season
  - b) Educate members about your farming practices
  - c) Inform members of how to store produce
  - d) Provide recipes for preparing vegetables and fruits
  - e) Provide information about crop history, crop culture, culinary uses
  - f) Present issues related to sustainable food and agriculture systems
  - g) Story telling, entertainment: E.g., personal stories featuring the farmers, farm apprentices, interns, paid laborers, or CSA members
  - h) Other possible content: Photos of farm, farmers, interns, paid laborers, CSA members; artwork of vegetables, fruits, flowers
2. Who designs and writes the newsletter? (Depends on your scale)
  - a) Farmer, Paid CSA coordinator, CSA members, interns/apprentices can each be in charge of designing, editing, and distributing the newsletter
  - b) Farmers can also simply contribute a column that keeps members up to date on farm happenings, with others accepting primary responsibility for content, layout, etc.
3. Frequency
  - a) During off season: Once a month to keep members informed about what the farmers are doing to prepare for the season, share current issues in sustainable agriculture, etc.
  - b) During the season: Once a week with each share (hard copy, website, or email), also has details about the crops and varieties included in their share and what to do with them (people love recipes)
4. Design/Layout
  - a) Keep it simple: One page, single or double-sided
  - b) Create a masthead that includes the name of the newsletter; the name of the farm; the date; volume number; and farm or CSA logo
5. Examples of newsletters (see also Appendix 5)
  - a) Angelic Organics, [www.angelicorganics.com](http://www.angelicorganics.com)
  - b) Peacework Organic CSA, [www.peaceworkcsa.org/about/newsletter-archive/](http://www.peaceworkcsa.org/about/newsletter-archive/)
  - c) UCSC Farm CSA, [casfs.ucsc.edu/community/produce-sales/csa-newsletters.html](http://casfs.ucsc.edu/community/produce-sales/csa-newsletters.html)
  - d) Waltham Fields Community Farm, [communityfarms.org/index.php/csa/csa-newsletters/](http://communityfarms.org/index.php/csa/csa-newsletters/)
  - e) Shooting Star CSA, [www.shootingstarcsa.com/Shooting\\_Star\\_CSA/Newsletters.html](http://www.shootingstarcsa.com/Shooting_Star_CSA/Newsletters.html)

## D. Shareholder Surveys (see Appendix 6, UCSC Farm CSA Shareholder End-of-Season Survey)

1. Purpose
  - a) To survey shareholders' satisfaction and involvement with the CSA
  - b) To provide members an opportunity to define what they like about the CSA and provide suggestions for changes
  - c) To survey membership for their opinions on produce quantity, quality, and variety

2. Methods
  - a) Online survey sent via email or embedded on your website/in your e-newsletter
  - b) Include paper copy as supplement in newsletter
  - c) Informally survey members by talking one-on-one at pick up
  - d) Conduct survey at shareholder gatherings (Membership CSAs only)

### **E. “Work Exchange Shares” on the Farm**

1. Important considerations in developing a work exchange program
  - a) Liability, insurance, workman’s comp, what state labor regulations are pertaining to “volunteers” and people working on your farm, regardless of compensation type (see Unit 8.0, Farm Employees and Innovative Models for Interns and Apprentices for a discussion of employee and volunteer considerations)
  - b) Once you have determined that work shares are of interest to your operation, here are the important factors for consideration:
    - i. Hours required for a share
    - ii. Tracking hours worked
    - iii. Who will meet with and explain needed work priorities, activities on the farm?
    - iv. Develop farm policy: Members will need to be informed of these policies from the beginning to prevent any misunderstandings
    - v. Example: Vermont Valley Community Farm (in Wisconsin) [www.vermontvalley.com/worker-shares](http://www.vermontvalley.com/worker-shares); Peacework Organic CSA (in New York) [www.peaceworkcsa.org/about/work-requirements/](http://www.peaceworkcsa.org/about/work-requirements/)
2. CSAs that require members to work on the farm
  - a) It is important to motivate your members and get them excited about their participation
  - b) It is important to communicate that their participation is imperative for the CSA to remain sustainable

### **F. Volunteers, Workdays, and Special Events**

1. Periodic scheduled workdays can develop relationships with your members and assist at critical time periods in getting farm work completed
2. Organizing for volunteers/work days/special events
  - a) Determine who will organize and/or be in charge of volunteers, workdays, and special events
  - b) Determine when you will need volunteers and provide advanced or scheduled notice to members
  - c) Consider liability and labor laws; many farms now have waivers for all volunteers (and visitors)
  - d) Develop farm policies regarding age of volunteers, animals on farm, tool use, times of visitation, etc.
  - e) Members need to be made aware of policies in advance
3. Special events: Harvest Festivals, workshops, potlucks, fundraisers
  - a) Special events provide members opportunities to visit the farm to enjoy and celebrate the growing of food and the CSA relationship
  - b) Find out from your membership who would be interested in being the “special events coordinator.” Delegate to that person(s).

### **G. CSA and Community Service** (donations, gleaning programs, etc.)

1. For farms that decide that making a community contribution (beyond growing food) is one of their goals
  - a) Examples of social services programs associated with CSAs
    - i. Harvest Against Hunger, Seattle ([firstharvest.org](http://firstharvest.org)) – A Rotary Club/AmeriCorps program that partners gleaning from local farms to hunger relief organizations
    - ii. Marin Organic Gleaning Program ([www.marinorganic.org/food-justice/](http://www.marinorganic.org/food-justice/)) – Farmers donate vegetables that are harvested by a “glean team” and donated to area food banks and community organizations
    - iii. The UCSC Farm CSA – Excess produce is donated to a variety of organizations serving low-income groups including California Grey Bears, local soup kitchens serving the homeless population of the City of Santa Cruz, and the UCSC campus food pantry serving food insecure students and their families
  - b) Donate left over CSA boxes to service organizations, have them pick up at the farm
  - c) Partner with an NGO (Food Bank, etc.) to collect gleaned harvests from the farm

### **H. CSA Core Group Development and Recruitment** (only for Membership CSAs)

1. What is a CSA core group?
  - a) Core groups provide the community support that can create the stability for farms that offsets the unpredictability of nature and the produce market
  - b) The core group averages 5–12 people, which includes farmers and CSA shareholders
  - c) The core group accepts additional responsibilities, which can include distribution, collecting payments, organizing festivals, preparing the budget, paying the farmers, dealing with legal issues, and recruiting more shareholders as required
  - d) Core groups are often an indispensable part of CSA operations that, together with the farmer(s), create the institution that is true community supported agriculture. E.g., see Live Power Community Farm, [www.livepower.org/about-the-farm/](http://www.livepower.org/about-the-farm/).
2. How to develop a core group
  - a) Assess shareholder interest in taking on additional responsibilities beyond financial compensation for a share
  - b) Discuss with members (and potential members) your desire to have a committed group of individuals play a leadership role in the administration and support of the CSA
  - c) Assess what skills your members could offer (e.g., web design, newsletter writing, publishing, brochure and survey distribution, database management, distribution, accounting, legal work, organizing work crews and/or celebrations). Encourage members to accept leadership in these roles.

Example: Angelic Organics CSA Shareholder’s Service Directory (see: [www.angelicorganics.com](http://www.angelicorganics.com)). The Shareholder’s Service Directory encourages the sharing of skills and talents among CSA shareholders and may help identify people who have particular talents.
  - d) Examples of core group roles/responsibilities (see Appendix 1, Job Descriptions for the Genesee Valley Organic Community Supported Agriculture Core Group, in Unit 3.2, CSA Structure and Organization)
    - i. Membership Coordinator – Ensures contact between farmer and members, collects all correspondence and fees, and addresses membership questions, concerns
    - ii. Treasurer – Receives fees from the membership coordinator, keeps a schedule of payment, deposits fees, writes checks to farmer, does bookkeeping, and maintains a bank account

- iii. Communication Coordinator – Writes email or online newsletters, and maintains membership list and addresses
- iv. Volunteer Coordinator – Helps coordinate volunteer days, maintains a list of volunteers, and calls volunteers for market assistance when needed
- v. Social Director – Organizes social activities, coordinates volunteers for activities, and works with the farmer for on-farm special events
- vi. Low-Income CSA Coordinator – Identifies families for free or reduced-fee shares, contacts families for the farmer, and ensures that shares are distributed to families
- vii. Other core group roles
  - Database manager
  - Survey/evaluation writer and distributor
- e) CSA Core Group meetings
  - i. The importance of regular meetings (approximately once a month)
  - ii. Decide how you want meetings to be run: Facilitator, note taker, etc.
  - iii. Have an agenda and time limit for each meeting, and stick to it
  - iv. Decide on your decision-making process (consensus, majority, etc.)
  - v. Allow for everyone present to participate in the meeting



# Appendix 1: Steps to Forming a CSA

## **To form a subscription CSA or membership/share CSA, start small and grow organically!**

1. Initiators (either farmers or groups of non-farmers) issue a call to form a CSA. You as a farmer can also seek members/subscribers:
  - a) Among friends or neighbors
  - b) Among existing groups: daycares, environmental or consumer organizations, churches, civic groups, schools or other institutions, workplaces
  - c) For Subscription CSAs, by advertising as any new business would in order to gain customers
2. If going with a Membership/Share CSA: Hold exploratory meeting of prospective sharers and farmer(s). Possible agenda:
  - a) What is a CSA?
  - b) Why eat locally grown food?
  - c) Why small farms need support
  - d) Assess level of commitment of participants
  - e) If interest is high enough, create founding core group
3. If going with a Membership/Share CSA: At this meeting or a subsequent meeting, come to agreement on the group's values:
  - a) Does the group want organic food?
  - b) Does the group want locally grown food?
  - c) Does the group want racial, ethnic, and economic diversity among members?
  - d) Is it important to involve children?
  - e) Will all members contribute work, or will some buy out by paying a higher fee?
  - f) Do members want to share production risks with the farm(s)?
  - g) What commodities does the group want?
  - h) Does the group want to share mailing list with other groups?
4. If going with a Membership/Share CSA: Organize the core group to:
  - a) Decide on farmer(s)
  - b) Decide growing site
  - c) Decide how and where food will be distributed
  - d) Divide up member responsibilities
  - e) Approve the budget proposed by the farmer(s)
  - f) Set fee policy and payment schedule
  - g) Clarify expectations as to variety and quantity of food
  - h) Set guidelines on participation of children (if desired)
  - i) Decide who owns any equipment purchased
5. If going with a Membership/Share CSA: The core group recruits additional members through a variety of techniques:
  - a) Post fliers
  - b) Organize recruitment meetings
  - c) Talk up idea with friends
  - d) Share on social media sites (Facebook, etc.)
  - e) Place notices in organizations, churches, mailing to likely groups

- f) Send out press release
  - g) Find friendly reporter to write story
6. Both types of CSAs: Ideally, CSA members make a commitment –
    - a) To pay in advance of receipt of food (whether by season, month, or other schedule), regardless of quantity and quality of food due to conditions
    - b) Perhaps to participate in farm, distribution, and other work (less common)
  7. Establish the legal status of the CSA. Many defer decisions on legal structure for a season. Advice from a lawyer may be helpful, or see Nolo Press in Resources, Unit 3.0. Existing options include:
    - a) Consumer cooperative
    - b) Sole proprietorship or partnership of farm
    - c) Corporation or limited liability corporation
    - d) Nonprofit corporation (or branch of existing nonprofit)
    - e) farmer-owned co-op
  8. Determine capitalization of farm(s). May start with a minimum amount of rented or borrowed equipment. For the longer term, decision to be made on purchase and maintenance. Options include:
    - a) Farmer(s) capitalize
    - b) Members capitalize through fees
    - c) The group seeks grants
    - d) The groups seeks loans. Possible sources include FarmLink, Farm Credit, National Cooperative Bank, commercial banks, revolving loan funds
 Options for land tenure include:
    - e) Private holding
    - f) Land trust
    - g) Lease agreement with private owner or institution (see Unit 9.0, Land Tenure Options and Strategies, for more information)

Adapted from *Sharing the Harvest: A Guide to Community Supported Agriculture, 2nd Edition*, by Elizabeth Henderson and Robyn Van En. Chelsea Green Publishing Co., 2007.

# Appendix 2: Confidential Low-Income CSA Membership Application

**CONFIDENTIAL**

**2015 Low Income Community Supported Agriculture (CSA) Membership Application**  
 Center for Agroecology & Sustainable Food Systems, University of California, Santa Cruz

The aim of **Community Supported Agriculture (CSA)** is to build a healthy community by providing a local, organic food supply and by re-establishing a relationship between the community and the farmer. It is a partnership—the community members support the farm and farmers directly for an entire season and in return receive a share in the weekly harvest. This partnership increases community involvement in food production and in the health of the local economy and environment.

The **UCSC Farm’s CSA program**, part of the *Apprenticeship in Ecological Horticulture*, is a training ground for 40 apprentices in crop planning, cultivation techniques, harvest methods and community outreach and education. Members of the CSA receive a weekly share throughout the harvest season, beginning in early June and continuing for approximately 22 weeks.

**The UCSC Farm is committed to making our CSA program accessible to individuals and families of all economic backgrounds. To ensure this, we are offering low-income memberships at the half-price rate (\$280) for our growing season. To apply, please complete the following information. Acceptance is based on a first-come, first-serve basis and is available to those applicants who demonstrate the greatest need. EBT cards are accepted for food benefits.**

Name (s) \_\_\_\_\_

Street Address \_\_\_\_\_

City / State / Zip \_\_\_\_\_ Home # \_\_\_\_\_

Occupation \_\_\_\_\_ Cell or Work # \_\_\_\_\_

Spouse / Partner's Occupation (if applicable) \_\_\_\_\_ Email \_\_\_\_\_

If you are a student, can a parent or guardian claim you as a dependent on their IRS federal tax form? \_\_\_\_\_

Combined monthly income \$ \_\_\_\_\_ Add'l income \$ \_\_\_\_\_  
e.g. child support, etc.

Number of children supported by the applicant / family? \_\_\_\_\_ Monthly expenses \$ \_\_\_\_\_

Circle one category below – A, B, or C, and complete:

A. Individual / family receives public assistance – circle one that applies:  
 SNAP (EBT card)      Social Security      Unemployment      Disability      AFDC # \_\_\_\_\_      Medical # \_\_\_\_\_

B. Income – circle one if gross monthly income is under (over 5 people, add \$678 per person):  
 \$1,946 (1 person)      \$2,622 (2 people)      \$3,300 (3 people)      \$3,976 (4 people)      \$4,652 (5 people)

C. Individual / family income is over category B guidelines, but feel assistance is needed. Please explain:  
 \_\_\_\_\_  
 \_\_\_\_\_

➔ **Required:** Please explain your reasons for requesting a low-income membership to the UCSC Farm CSA (cont. back of page), and, if you file taxes, include a copy of last year’s IRS federal tax return 1040, pages 1 and 2 (income and signature/date).

# Appendix 3: UCSC Farm CSA Pledge Form

## 2015 Community Supported Agriculture (CSA) Shares Pledge Form

*In becoming a member of the UCSC Farm CSA, I understand the following:*

- I am making a financial commitment for the 2015 farm season. As the designated primary shareholder, I understand that my share payment is non-refundable.
- I recognize that due to the inherent risks of farming, there are no guarantees on the exact amount of produce that I will receive.
- that my share comes from an educational farm and that apprenticing farmers are producing my food.
- I understand and accept this commitment and assume responsibility to contact the staff if there are any questions or concerns.

**Please note that in order to complete your reservation for the 2015 CSA Program, you must submit payment with a signed pledge form to the address listed below.**

Signature \_\_\_\_\_ Date \_\_\_\_\_

Primary Shareholder \_\_\_\_\_ Co-Shareholder \_\_\_\_\_

Primary Address \_\_\_\_\_ Zip \_\_\_\_\_  
Street / City

Primary Cell # \_\_\_\_\_ Home or Work # \_\_\_\_\_

Email \_\_\_\_\_ Co-share Email \_\_\_\_\_

Co-share Phone \_\_\_\_\_

### Payment options

#### FULL SEASON: (begins Tuesday, June 2):

payment in full: **\$560**

Two checks: **\$280**

today's date and post-dated June 1 **\$280**

Four checks: **\$140**

today's date and post-dated June 1 **\$140**

post-dated July 1 **\$140**

post-dated Aug 1 **\$140**

#### LATE SEASON: (begins Tuesday, Aug. 18):

payment in full: **\$280**

Two checks: **\$140**

today's date and post-dated Sept 1 **\$140**

### Pick-up site

Tuesdays at the Farm (noon-6:30 p.m.)

Fridays at the Farm (noon-6:30 p.m.)

Fridays at Bay & High (2:30-6:00 p.m.)

#### OFF-CAMPUS PICKUP SITE:

Westside (Tuesday only 2:30-5:30 p.m.)

Location: **Westside Farm & Feed**  
817 Swift St., Santa Cruz 95060

Office Use Only:  Payment enclosed

Date rec'd: \_\_\_\_\_ Check payment amount: \_\_\_\_\_

**Payment by Check only**, payable to "UC Regents" Money order or cashier's check OK

**Send with this pledge form to:**

CASFS / UCSC Farm  
1156 High Street  
Santa Cruz, CA 95064  
Attn: CSA

#### Make a donation to support low-income shares!

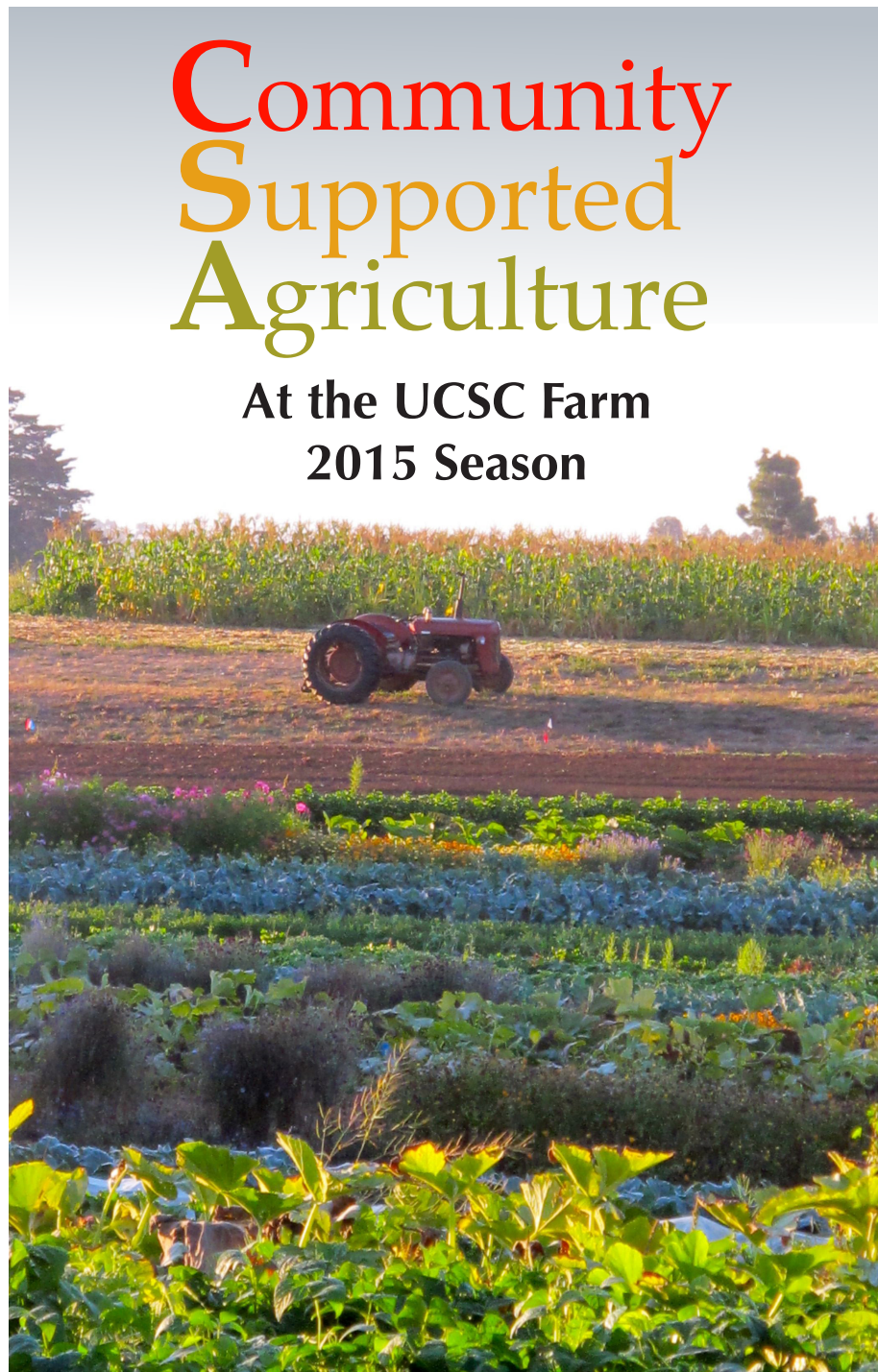
We gratefully accept donations to support low-income shares. *Donations are tax deductible.*

If you would like to donate, please include with your pledge form and payment, indicating the amount below:

\$25  \$50  \$100  \$280 (full share)

I would like to donate \$\_\_\_\_\_ to a low-income share.

## Appendix 4: UCSC Farm CSA Brochure



*The* CENTER for AGROECOLOGY & SUSTAINABLE FOOD SYSTEMS  
UNIVERSITY OF CALIFORNIA, SANTA CRUZ

# Appendix 4 (cont.): UCSC Farm CSA Brochure

## Community Supported Agriculture (CSA)

CSA is a collaboration between the local community and the farmer. The community members support the farm directly for an entire season and in return receive a share in the weekly harvest. This partnership increases community involvement in food production and in the health of the local economy and environment.

## CSA at the UCSC Farm and Garden

For more than 46 years, people from around the world have come to the UCSC Farm and Garden each spring to take part in the six-month Apprenticeship in Ecological Horticulture, offered through the Center for Agroecology & Sustainable Food Systems (CASFS). Under the direction of the CASFS teaching staff, apprentices have an immersion learning experience in cultivation and care of organic crops using ecological methods. They are intimately involved in the whole season's work, planting, cultivating, and harvesting crops from the six acres of tractor-worked fields and the two large gardens – the Farm Garden and the Alan Chadwick Garden. Apprentices harvest for the CSA and the CASFS market cart held seasonally from June through October. The apprenticeship program of study covers agricultural and horticultural topics including soils and soil fertility management, plant propagation, composting, hand-scale and tractor tillage, irrigation, pest management and crop culture, as well as food justice / sustainable food systems.

The CSA program was piloted in 1995, and grew quickly to the current 130-member capacity. The CSA serves the campus and Santa Cruz community. Ten percent of shares are reserved for low-income households, and we donate thousands of pounds of produce each year to community organizations serving populations in need.

### ***Our Vision is to –***

- establish a partnership between the local community and apprenticing organic growers
- demonstrate a viable model of sound economics for small-scale farming and regional food systems
- foster ecological stewardship of the land
- provide the community with high quality, nutritious produce in season

Table of Contents	
<i>The CSA Season: What to Expect</i> . . . . . 2-3	Pick-up Days and Locations. . . . . 3
What's in the Box?. . . . . 2	How to Contact Us . . . . . 3
Recipes and Newsletters . . . . . 2	Produce List. . . . . 4
Friends of the Farm & Garden . . . . . 2	Support Low-Income Shares . . . . . 6
Cost and Season Dates . . . . . 2	Members' Comments. . . . . 6
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*Cover photograph by Britt Retzlaff, 2011 Apprentice*



# Appendix 4 (cont.): UCSC Farm CSA Brochure

## ***The CSA Season: What to Expect***

Our planned start date is Tuesday, June 2nd, with the season extending through Friday, October 30th, weather permitting.

### **What's in the box?**

Each week's box will contain a diversity of crops (9-13 items), balanced amongst greens, root crops, summer vegetables, fresh herbs, and tree fruit and berries (see page 4 for our crop list). We pack a one-size box, which feeds two to four adults for a week, depending on cooking habits. Members can sign up to share a box with a co-member. Usually, friends agree to share a membership and submit their payment together, but we can also help to facilitate shared boxes.

### **Recipes and Newsletters**

Members receive a weekly newsletter (email and/or print) with produce recipes and farm news! Additionally, we offer a recipe archive on our website.

### **Friends of the Farm and Garden Membership**

CSA members receive a complimentary membership to the Friends of the Farm and Garden (FF&G) for the duration of the CSA season. FF&G membership benefits include a 10% discount on plants and merchandise at our biannual plant sales and discounts to FF&G-sponsored workshops.

### **Cost and Season Dates**

**Full season \$560** (planned 22 weeks, June 2 - Oct. 30)

**Late season \$280** (last half of season, 11 weeks Aug 18 - Oct. 30)

*For payment plan, see page 5. (Please note that no refunds are available.)*

### **Low-income Shares**

Ten percent of our shares are reserved each year for low-income households at the price of \$280 per share. We also accept SNAP/EBT benefits for CSA payment. To apply, contact [farmcsa@ucsc.edu](mailto:farmcsa@ucsc.edu) to have an application mailed to you. *To help support low-income shares, please see information on page 6.*

### **Volunteer Opportunities**

Volunteers are welcome to join the apprentice crew in harvesting on **Tuesday** and **Friday** mornings, by arrangement. It's a really fun way to see up close how the food grows! Volunteers are also welcome to join our Banana Slug "Glean Team" to harvest remainder crops for local food banks. Call 459-3240 or email [farmcsa@ucsc.edu](mailto:farmcsa@ucsc.edu) if you would like to get involved.

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# Appendix 4 (cont.): UCSC Farm CSA Brochure

## Pick-up Days and Locations

Crops are harvested the same day they are packed! Members pick up their boxes in the afternoons on either **Tuesdays** or **Fridays** (same day of the week for duration of season, with option to change permanently or temporarily with advance notice). Members bring their own carry bags to the farm or pick-up site, and transfer the contents of their box to take home.

Shares not picked up at the end of the day will be donated to local food access organizations. Map and directions to the farm will be sent before the season begins, along with a temporary parking permit for pick up on the farm.

Pick-up Day	Location
<b>Tuesdays</b>	<b>CASFS Farm</b> or <b>Westside Farm &amp; Feed</b> (Swift St.)
<b>Fridays</b>	<b>CASFS Farm</b> or <b>Market Cart</b> (corner of Bay & High Streets)

Pick-up Times	Location
<b>12:00 noon to 6:30 pm</b>	On-farm
<b>2:30 pm to 6 pm</b>	Market Cart
<b>2:30 pm to 5:30 pm</b>	Westside Farm & Feed



The UCSC Farm's CSA program is part of the Center for Agroecology & Sustainable Food Systems (CASFS), a research, education, and public service program dedicated to increasing ecological sustainability and social justice in the food and agriculture system.

The CASFS mission is to research, develop, and advance sustainable food and agricultural systems that are environmentally sound, economically viable, socially responsible, non-exploitative, and that serve as a foundation for future generations. Center staff conduct research on both agronomic and social aspects of sustainable agriculture, as well as offer an extensive public education program, including tours of the UCSC Farm and a series of public workshops on gardening techniques and other topics (see page 7).

## How to Contact Us

*Mailing Address:* CASFS / UCSC Farm  
1156 High Street  
Santa Cruz, CA 95064  
Attn: CSA

*Phone Number:* 831.459-3240 or 831.459-4661 | *Email:* farmcsa@ucsc.edu

*Web page:* <http://casfs.ucsc.edu/community/produce-sales/csa.html>

*Location:* UCSC Farm and Garden

*Detailed instructions on parking will be sent with membership confirmation.*



# Appendix 4 (cont.): UCSC Farm CSA Brochure



## Produce Availability Guide

CSA is a unique opportunity to experience local, seasonal eating and deepen your connections amongst food, land and community.

We strive to make boxes diverse and bountiful throughout the season. Weekly newsletters will keep you in touch with the field and growing conditions as the summer goes on.

### Pick-Your-Own Herb & Flower Garden

CSA members are invited to cut flowers and herbs from the garden at the Farm pick-up site.

JUNE		JULY-AUGUST		SEPTEMBER-OCTOBER	
arugula	spinach	spinach	spinach	spinach	spinach
Asian greens	salad mix	salad mix	salad mix	salad mix	salad mix
spinach	lettuce	lettuce	lettuce	Swiss chard	Swiss chard
lettuce	beets	beets	beets	kale	kale
Swiss chard	carrots	carrots	carrots	radicchio	radicchio
beets	broccoli	broccoli	broccoli	endive	endive
carrots	cabbage	cabbage	cabbage	beets	green beans
turnips	basil	basil	basil	broccoli	potatoes
kohlrabi	cilantro	cilantro	cilantro	cauliflower	pumpkins
broccoli	dill	dill	dill	fennel	winter squash
cilantro	cucumbers	cucumbers	cucumbers	basil	tomatoes
blueberries	zucchini	zucchini	zucchini	cilantro	(dry-farmed and heirloom)
strawberries	green beans	green beans	green beans	zucchini	zucchini
plums	sweet corn	sweet corn	sweet corn	strawberries	strawberries
	new potatoes	new potatoes	new potatoes	apples	apples
	strawberries	strawberries	strawberries		
	plums	plums	plums		

# Appendix 4 (cont.): UCSC Farm CSA Brochure

## 2015 CSA Shares Pledge Form

*In becoming a member of the UCSC Farm CSA, I understand the following:*

- I am making a financial commitment for the 2015 farm season. As the designated primary shareholder, I understand that my share payment is non-refundable;
- I recognize that due to the inherent risks of farming, there are no guarantees on the exact amount of produce that I will receive;
- that my share comes from an educational farm and that apprenticing farmers are producing my food; and
- I understand and accept this commitment and assume responsibility to contact the staff if there are any questions or concerns.

**Please note that in order to complete your reservation for the 2015 CSA Program, you must submit payment with a signed pledge form to the address listed below.**

Signature \_\_\_\_\_ Date \_\_\_\_\_

Primary Shareholder \_\_\_\_\_ Co-Shareholder \_\_\_\_\_

Primary Address \_\_\_\_\_ Zip \_\_\_\_\_  
Street / City

Cell # \_\_\_\_\_ Home or Work # \_\_\_\_\_

Primary Email \_\_\_\_\_ Co-share Email \_\_\_\_\_

### Payment options

#### FULL SEASON:

payment in full: **\$560**

Two checks: **\$280**  
 today's date and post-dated June 1 **\$280**

Four checks: **\$140**  
 today's date and post-dated June 1 **\$140**  
 post-dated July 1 **\$140**  
 post-dated Aug 1 **\$140**

#### LATE SEASON:

payment in full: **\$280**

Two checks: **\$140**  
 today's date and post-dated Sept 1 **\$140**

**Payment by Check only** Money order or Cashier's check OK  
 payable to "UC Regents"  
 Send **with this pledge form to:**  
 CASFS / UCSC Farm  
 1156 High Street  
 Santa Cruz, CA 95064  
 Attn: CSA

### Pick-up site

- At the Farm (noon-6:30 p.m.)
- Tuesdays
  - Fridays

- Bay & High (Friday only 2:30-6:00 pm)
- Westside Location (Tuesday only 2:30-6:00 pm)

Office Use Only:  Payment enclosed

Check payment amount: \_\_\_\_\_ Date received: \_\_\_\_\_

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# Appendix 4 (cont.): UCSC Farm CSA Brochure

## ***Make a donation to support low-income shares!***

We gratefully accept donations to support low-income shares. Donations are tax deductible.

If you would like to donate, please include with your pledge form and payment, indicating the amount below:

\$25    \$50    \$100    \$280 (a full, low-income share)

I would like to donate \$\_\_\_\_\_ to a low-income share.

## **Pick-Your-Own Herbs & Flowers**

To complement your share, you are welcome to pick herbs and flowers throughout the season in the CSA garden adjacent to the CSA Barn on the Farm.



## **The Exchange Basket**

On pick-up days, take advantage of our exchange basket and frequent offerings of farm bounty.

## **Comments from our CSA Members:**

*We enjoyed the rich flavor of CSA produce versus store bought. It was so rewarding to visit the farm with the kids and explain what we are a part of and how CSA upholds the values of our family.*

*The balance of produce has been very nice this year. We are looking forward to the winter box!*

*We love the farm experience and having fresh fruit and veggies every week, we hope to continue to be a part of this every year. Thank you!*

*I appreciated the half season share and the two-part payment option, as it's difficult to put all the money up at once. I look forward to my winter box. Thank you!*

*It has been fun to bring my toddler to the farm each week to gather our vegetables. This was our first CSA experience and it has been fun to get veggies we wouldn't have usually purchased on our own. I now love to eat roasted beets. They are sooo good.*

# Appendix 4 (cont.): UCSC Farm CSA Brochure

## 2015 Spring Calendar of Events

CSA membership includes complimentary membership of the Friends of the Farm & Garden (FF&G) during the CSA season and are eligible for discounts on workshop fees (typical pre-registration cost is \$30 general public; \$20 FF&G members). Pre-register online or by check (send check, payable to "UC Regents" to:

CASFS | 1156 High St. | Santa Cruz, CA 95064 | Attn: Workshop  
Please include workshop name/date and contact info). Full refunds available if event is cancelled due to inclement weather. A current calendar is posted on the CASFS website's home page, [casfs.ucsc.edu](http://casfs.ucsc.edu)

### **Selecting & Growing Citrus in the Backyard Orchard & Small Farm**

*Saturday, February 28, 9:30 am – 1 pm*  
*Louise Cain Gatehouse, UCSC Farm*

Join workshop instructors Daniel Paduano, owner of Abounding Harvest Mountain Farm, and Orin Martin, manager of UCSC's Chadwick Garden to learn about the best varieties of citrus (lemons, limes, oranges, tangerines, and more) for the Monterey Bay region; how to select and prepare a planting site; how to plant; and how to irrigate, fertilize, prune, and control pests and diseases in a range of citrus trees. Includes a tasting of local citrus.

Workshop cost, general admission: **\$55** (*pre-registered*) / **\$65** (*at gate*);  
FFG members: **\$45** / **\$55**; UCSC Farm & Garden Docents: **\$35** / **\$45**;  
UCSC students and limited income: **\$30** / **\$40** (student ID required).

Register online: <http://citrus2015.bpt.me> or by check (*see page above*).

### **Gopher Control in the Home Garden & Small Farm**

*Saturday, March 7, 9:30 am – 12:30 pm*  
*Louise Cain Gatehouse, UCSC Farm*

Learn how to control gophers in the home garden, landscape, and on the small farm using non-toxic techniques that focus on exclusion and trapping. Taught by Thomas Wittman, founder and owner of Gophers Ltd., an expert on vertebrate pest control. General admission: **\$30** / **\$40** (*at gate*); FFG members: **\$20** / **\$30**;  
**\$5** current UCSC students (student ID required).

Register at: <http://gopher2015.bpt.me> or by check (*see above*)

# Appendix 4 (cont.): UCSC Farm CSA Brochure

## 2015 Calendar of Events *(continued)*

### **All About Berries—Blueberries & Cane Fruit for the Home Garden & Small Farm**

*Saturday, April 4, 9:30 am–12:30 pm  
Louise Cain Gatehouse, UCSC Farm*

Learn the basics of selecting, planting, and caring for blueberries and cane berries (blackberries, raspberries, etc.) in the home garden and small farm from Matthew Sutton of Orchard Keepers. General admission: **\$30 / \$40**; FFG members: **\$20 / \$30**; Limited income: **\$15 / \$25**; Current UCSC students: **\$5** (student ID required).

*Register online: <http://berries.bpt.me> or by check (see page 7).*

### **UCSC Farm & Garden Spring Plant Sale**

*Saturday, May 2, 10 am–3 pm and Sunday, May 3, 10 am–2 pm  
Barn Theater Parking Lot, corner of Bay & High Streets, UCSC*

Choose from the largest organically grown selection of vegetables, annual flowers, and perennials available in the Monterey Bay region. Please note: Friends of the Farm & Garden members are welcome to a "members' hour" from 9–10 am on Saturday, May 2.

### **A Garden of Poetry and Music**

*Saturday, June 20, 12 noon – 2 pm  
Alan Chadwick Garden, UCSC*

Join us for this free event in the historic Alan Chadwick Garden and enjoy the talents of our region's poets and musicians. This is a wonderful way to celebrate the Summer Solstice! Free admission, snacks provided. Questions? Email [casfs@ucsc.edu](mailto:casfs@ucsc.edu)

*Look for these summer workshops and events at [casfs.ucsc.edu](http://casfs.ucsc.edu):*

**Summer Pruning; Selecting and Planting Garlic; Farm to Fork Benefit Dinner; Fall Harvest Festival**



# Appendix 4 (cont.): UCSC Farm CSA Brochure

*Never doubt that a small group of thoughtful committed citizens  
can change the world. Indeed it's the only thing that ever has.*

–Margaret Mead



**UCSC Farm – Community Supported Agriculture (CSA)**  
1156 High Street  
Santa Cruz, CA 95064  
831.459-3240 or 831.459-4661 | *Email:* farmcsa@ucsc.edu  
<http://casfs.ucsc.edu/community/produce-sales/csa.html>

# Appendix 5: Examples of CSA Newsletters

## **UCSC Farm CSA**

2-page (double-sided) newsletter is printed and distributed with boxes, as well as emailed to shareholders as a PDF (example on following pages). The newsletters are archived online at *casfs.ucsc.edu/community/produce-sales/csa-newsletters.html*

## **Shooting Star CSA (Fairfield, California)**

See example on following pages, and see other issues at: *www.shootingstarcsa.com/Shooting\_Star\_CSA/Newsletters.html*

Other examples of CSA newsletters that can be found online:

## **Angelic Organics Farm News (Caledonia, Illinois)**

*angelicorganics.wordpress.com/*

## **High Ground Organics (Watsonville, California)**

*www.highgroundorganics.com/csa-program/csa-membership-information/weekly-newsletter/*

## **Waltham Field Community Farm (Waltham, Massachusetts)**

*communityfarms.org/index.php/csa/csa-newsletters/*



# Appendix 5 (cont.): Examples of CSA Newsletters

## FIELD notes

UCSC Farm  
Community Supported Agriculture  
Tenth Harvest: 8/5/14 & 8/8/14



### What's in the box?

Lettuce, <i>Green Butter</i>	Summer Squash, <i>mix</i>
Onions, <i>Cipollini</i>	Cucumber, <i>Marketmore</i>
Basil, <i>Sweet Thai</i>	Cabbage, <i>Farao</i>
Dill, <i>Bouquet</i>	Broccoli, <i>Gypsy</i>
Corn, <i>XTender 270A</i>	Potatoes, <i>Yukon Gold</i>
Green Beans, <i>Bronco</i>	Strawberries, <i>Albion</i>

### Harvest Forecast\* for August 12 and 15

Corn	Red Beets	Squash
Green Beans	Red Onions	Strawberries
Jalapeños	Salad Mix	

\*Harvest may vary for 1 or 2 crops, determined on day of harvest

### Recipes by Crop

Recipe PDFs are online, indexed by crop, at:  
<http://casfs.ucsc.edu/community/produce-sales/recipes.html>

Newsletter archives are also available online at:  
<http://casfs.ucsc.edu/community/produce-sales/csa-newsletters.html>

### Upcoming Event

**Fall Gardening Workshop: Transplanting & Direct Seeding for Fall & Winter Crops**  
Saturday, August 23 – 9:30 to 12:30 pm  
Alan Chadwick Garden – UCSC

Extend your gardening season! Orin Martin and Sky DeMuro of UCSC's Chadwick Garden will teach participants about crops that grow well in fall and over the winter in the Monterey Bay region. Workshop held at the Alan Chadwick Garden. Topics covered: sowing seeds and raising seedlings indoors; when to transplant; and what crops to sow directly in garden beds. Be prepared to get your hands dirty! Participants will go home with a six-pack of vegetables or flowers.

**COST:** \$20 for Friends of the Farm & Garden members (pre-registered) / \$30 at the door; \$30 / \$40 general admission; \$15 / \$25 UCSC students and limited income. Register online at <http://seedsowing.bpt.me>, or send a check, payable to "UC Regents" to:

CASFS  
1156 High St.  
Santa Cruz, CA 95064 Attn: Workshop  
For information, call 831.459-3240 or email [casfs@ucsc.edu](mailto:casfs@ucsc.edu).

### Notes from the Field by Mary Liz Watson, First Year Apprentice

It is hard to believe we are into August already! Sweet corn provided our harvest excitement this past week. We'd been watching the stalks grow taller and the ears gain size, and a peek into the cob revealed kernels plumping up. Then the pink silks started to dry up and brown, and the ears filled out all the way to the end, and they were ready!

The uses for sweet corn are endless. For southerners like myself, sweet corn marks the beginning of summertime. I have distinct memories of summer evenings, the air warm and heavy and full of fireflies, spent shucking corn on my grandmother's back porch. We'd eat our corn straight off the cob and serve it with okra and thickly sliced tomatoes or fried green tomatoes – all the bounty of Nana's garden.

New to this week's CSA box is Thai basil, which, when made into a smooth basil butter, serves as the perfect compliment to our sweet corn! Simply pulse the basil leaves and garlic in a food processor, add a bit of lemon juice, salt, and sugar to taste, place the butter into basil mixture and process until smooth.

For those of the 'Waste Not Want Not' philosophy, warming (note: not simmering) the blossoms in olive oil on the stovetop yields an aromatic dip for bread and veggies. If you are overwhelmed with basil, try infusing it into simple syrup for future use in flavoring drinks, desserts, and popsicles.

In other happenings, the summer routine is pretty serious with summer squash on its usual rampage, the tomatoes setting fruit and beginning to ripen, and our little farm community continues to eat well.



CENTER FOR AGROECOLOGICAL & SUSTAINABLE FOOD SYSTEMS  
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# Appendix 5 (cont.): Examples of CSA Newsletters

UCSC Farm  
Community Supported Agriculture  
Tenth Harvest: 8/5/14 & 8/8/14



## Tomato-Corn Pudding with Leeks and Peppers

- 4 ears of sweet corn, shucked and cut off cob
- 1 large leek, sliced
- 1 cubanelle\* pepper, diced
- 1 tomato, diced
- 1 bunch (about 2 T) fresh thyme, chopped
- 1 T fresh parsley, chopped
- 1 T fresh chive, chopped
- 2 egg whites
- 1 cup whole milk
- Salt and pepper to taste

In a large saute pan, sweat leek, cubanelle and thyme in olive oil over medium-high heat for about 5 minutes.

After the leeks and pepper become tender, add corn kernels and saute for 2-3 minutes. Season with salt and pepper, then drain off any excess liquid using a fine mesh strainer or colander. Transfer to a large mixing bowl and stir in diced tomato.

Brush a 7"x9" casserole dish with olive oil and spread vegetables evenly inside it. In small mixing bowl, whisk together egg whites and milk and pour over the corn.

Cover and bake at 400°F for 25-30 minutes or until the eggs have set. Allow to cool, and garnish with fresh parsley and chive.

\*Anaheim chiles may be used as a substitute.

[www.greengrow.org](http://www.greengrow.org)

## Parmesan Roasted Potatoes

- 4 cups cubed Yukon Gold potatoes (3/4" square cubes)
- 3 tbsp olive oil
- 1/2 tsp garlic salt
- 1/2 tsp salt
- 2 tsp paprika
- 1 tsp pepper
- 4 tablespoons freshly grated Parmesan cheese

Preheat oven to 425°F. Place cubed potatoes into a baking dish. Use baking spray on dish to reduce sticking.

Pile on olive oil, garlic salt, salt, paprika, pepper and Parmesan cheese. Using your fingers, or spoon, thoroughly coat all the potatoes with the seasonings.

Bake for 15 minutes. Remove from oven and toss the potatoes with a pair of tongs. Continue baking for 10 more minutes. Remove baking dish and give potatoes another toss. Continue roasting until golden and crispy.

Season with an dusting of sea salt and extra parmesan cheese and serve.

<http://whatsgabycooking.com>

## Peachy Sweet Corn Tacos with Lentils and Basil Slaw

Makes 10-12 tacos

### Slaw:

- 1/4 head of green cabbage, shredded
- 1 big sprig of basil, leaves removed and sliced
- juice of 1 lime
- 2 T grapeseed oil
- salt and pepper

### Succotash:

- 1/3 cup french lentils, rinsed
- 1 T grapeseed oil
- 1 shallot, small dice
- 1 small red pepper, small dice
- 1/2 tsp. chili powder (ancho or chipotle are amazing)
- 1/2 tsp. ground cumin
- 4 ears of corn, kernels removed
- 2 ripe peaches, pitted and diced
- juice of 1 lime
- salt and pepper

### Tortillas and garnish:

- 10-12 corn tortillas, warmed
- 1 avocado, peeled, pitted and sliced lime wedges

**Cook lentils:** Place the rinsed lentils in a small saucepan with 1 cup of water. Bring to a boil and simmer for about 20 minutes, or until lentils are tender but still have some bite. Set aside.

**Make slaw:** Combine the shredded cabbage, basil, lime juice, oil, salt and pepper in a large bowl. Toss to combine. Taste for seasoning and cover bowl with plastic wrap. Set aside in the fridge.

**Make succotash:** Heat grapeseed oil in a medium-large skillet over medium heat. Add diced shallot and red pepper. Saute mixture until soft and slightly translucent. Add chili powder and cumin. Saute until fragrant, about 30 seconds. Add corn kernels and stir to combine. Season with salt and pepper at this point. Cook, stirring frequently until corn is crisp-tender and slightly more golden, about 4 minutes.

Remove the pan from the heat. Add the diced peaches, cooked lentils and lime juice. Check for seasoning and keep warm.

**To assemble:** Place 1/4 cup or so of succotash in each tortilla, top with avocado slices and a generous helping of slaw.

[www.thefirstmess.com](http://www.thefirstmess.com)



# Appendix 5 (cont.): Examples of CSA Newsletters

October 14th, 2014

## **THIS WEEK'S SHARE:**

Lettuce: Skyphos or Cherokee  
Pumpkins: Baby Pam  
Beets: Detroit Dark Red  
Turnips: Hakueri  
Shallots: Conservador  
Chard: Bright Lights  
Tomatoes: Early Girl, Heirloom  
Sweet Peppers: Gypsy + Carmen

Chinese Cabbage: Minuet **OR** Summer Squash

## Possibilities for Next Week:

Butternut Squash  
Kale  
Arugula



Week 22

## **SHOOTING STAR CSA** suisun valley, ca

Cover Cropping for the Earth

The tractor lurches forward, dragging the disk behind it. To understand what a disk is, imagine a series of metal plates with a shaft running through their centers. The plates roll along as they dig into the soil displacing the weeds and breaking up clods. The disk is no spring chicken. We have no idea how old it is, all we know is that it works. Behind the disk is a fluffy soil that is ready for cover crop seeding. Cover cropping

is the most counter-intuitive thing a farmer can do. Growing a crop just to till it in the ground seems absolutely ridiculous from many conventional farmers points of view. From the point of view of the earth it is a pretty good idea; plants cover the ground during the rainy season preventing erosion and runoff. Cover cropping keeps the soil here on the farm, right where we want it. We plant a mix of seeds: bell beans, vetch, oats, and rye. The legumes are nitrogen fixing, which means that they pull nitrogen from the atmosphere; this nitrogen becomes part of the soil when we till it back in the spring. A good cover crop transforms a muddy field into a magical place full of wonder, legumes, and beneficial insects. Soil is a living thing and not meant to be exposed all the time. It is through cover cropping and responsible crop rotation that we believe that in 1000 years this soil will still be fertile. Enjoy your boxes.

### **Crop Notes:**

**Tomatoes:** This crop is winding down for the season. This week we have a little over a pound in each box. We hope to have them at least a little longer!

**Turnips:** These delicious Japanese turnips can be eaten raw or cooked. Raw, they resemble a less spicy radish. They are great chopped in a salad, stir-fried, braised or roasted. The leaves can be cooked just like mustard greens- make sure you wash them first.

**Pumpkins:** Baby Pam is a special kind of cooking pumpkin that makes great soups, pies, and also roasts well. It tastes nothing like the standard Halloween pumpkins (they are pretty bland if you have ever tried to cook one), has a sweet flavor and a texture more similar to Butternut squash.

**Chard:** This tasty leafy green is back for the fall. Cook it just like you would spinach or kale. The

Shooting Star CSA PO Box 3087 Fairfield, CA 94533 707-207-0548  
[shootingstarcsa@gmail.com](mailto:shootingstarcsa@gmail.com) [www.shootingstarcsa.com](http://www.shootingstarcsa.com)

# Appendix 5 (cont.): Examples of CSA Newsletters

October 14th, 2014

Week 22

stems can be eaten as well (they have a slightly longer cooking time than the leaves). It is great in tomato sauce over pasta, or sauteed with olive oil and sprinkled with lemon juice.

Chinese Cabbage: This is a totally new crop for us this year! It can be eaten raw like regular cabbage (shredded in a salad), or cooked. For cooking, use it just like you would bok choy: chop and stir fry with onions and garlic, soy sauce and sesame oil. Store in the fridge in a plastic bag. Let us know what you think!

## Recipes:

### **Pumpkin and Roasted Red Pepper Soup**

2 tablespoons olive oil

1 onion or 2 shallots, chopped

2 garlic cloves, minced

1 cooking pumpkin, peeled (optional) and seeded, cut into chunks

vegetable broth or water

4-5 sweet peppers

salt and pepper

Heat oil in heavy large pot over medium-high heat. Add onions; sauté until tender, about 10 minutes. Add garlic; stir 1 minute. Add pumpkin and enough broth or water just to cover; bring to boil. While it is cooking, roast peppers on a gas burner or in the oven broiler. Peel skin under running water, coarsely chop, and add to pot. When pumpkin boils, reduce heat, cover and simmer until it's soft, about 40 minutes. Working in batches, puree soup in blender until smooth. Return puree to pot. Season with salt and pepper.

### **Beet Salad** (adapted from molliekatzen.com)

1 bunch beets

1/4 cup cider vinegar

1 medium clove garlic, minced

1 to 2 teaspoons honey

1/2 teaspoon salt

1/2 cup minced onion or 1 shallot, chopped

1 cup plain yogurt (optional)

Freshly ground black pepper

2 tablespoons chopped fresh herbs: dill, parsley or cilantro

2 hard-boiled eggs, quartered or chopped (optional)

Trim the beets of their stems and greens, and place the beets in a medium-large saucepan. Cover them with water and bring to a boil. Cook for about 25 minutes, or until tender enough for a fork to slide in easily. Meanwhile, combine the vinegar, garlic, honey, salt, and onion, in a medium-large bowl. Rinse the cooked beets under cold running water as you rub off and discard their skins. Chop the beets and potatoes into 1/2-inch pieces, and add them, still warm, to the bowl. Stir and let stand about 30 minutes. Stir in the yogurt (if using), and season to taste with black pepper and, if necessary, more salt. Stir in the herbs. Serve garnished with hard-boiled eggs.

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[shootingstarcsa@gmail.com](mailto:shootingstarcsa@gmail.com) [www.shootingstarcsa.com](http://www.shootingstarcsa.com)

# Appendix 6: UCSC Farm CSA Shareholder End-of-Season Survey

The UCSC Farm CSA Shareholder End-of-Season Survey is distributed both online (via Survey Monkey), as well as made available in print.

## 2014 UCSC Farm CSA End-of-Season Survey

Please fill out this end-of-season survey in order to help us improve the CSA program. Mail completed surveys to UCSC Farm & Garden CSA, 1156 High St., Santa Cruz, CA 95064 or return to your pickup site.

### 1. I would prefer to have received more of the following produce:

- |                                      |   |   |
|--------------------------------------|---|---|
| <input type="checkbox"/> Apples      | <input type="checkbox"/> Cipollini Onions | <input type="checkbox"/> Plums                  |
| <input type="checkbox"/> Arugula     | <input type="checkbox"/> Corn             | <input type="checkbox"/> Potatoes               |
| <input type="checkbox"/> Avocados    | <input type="checkbox"/> Cucumbers        | <input type="checkbox"/> Pumpkins               |
| <input type="checkbox"/> Basil       | <input type="checkbox"/> Dill             | <input type="checkbox"/> Purplette fresh onions |
| <input type="checkbox"/> Beets       | <input type="checkbox"/> Fennel           | <input type="checkbox"/> Salad Mix              |
| <input type="checkbox"/> Blueberries | <input type="checkbox"/> Green Beans      | <input type="checkbox"/> Shallots               |
| <input type="checkbox"/> Broccoli    | <input type="checkbox"/> Kale             | <input type="checkbox"/> Spinach                |
| <input type="checkbox"/> Cabbage     | <input type="checkbox"/> Kohlrabi         | <input type="checkbox"/> Strawberries           |
| <input type="checkbox"/> Carrots     | <input type="checkbox"/> Lettuce          | <input type="checkbox"/> Tomatoes               |
| <input type="checkbox"/> Cauliflower | <input type="checkbox"/> Onions           | <input type="checkbox"/> Turnips                |
| <input type="checkbox"/> Celeriac    | <input type="checkbox"/> Pac Choi         | <input type="checkbox"/> Winter Squash          |
| <input type="checkbox"/> Chard       | <input type="checkbox"/> Peppers, hot     | <input type="checkbox"/> Yellow Wax Beans       |
| <input type="checkbox"/> Cilantro    | <input type="checkbox"/> Peppers, sweet   | <input type="checkbox"/> Zucchini               |

### 2. I would prefer to have received less of the following produce:

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Apples           | <input type="checkbox"/> Corn           | <input type="checkbox"/> Potatoes               |
| <input type="checkbox"/> Arugula          | <input type="checkbox"/> Cucumbers      | <input type="checkbox"/> Pumpkins               |
| <input type="checkbox"/> Avocados         | <input type="checkbox"/> Dill           | <input type="checkbox"/> Purplette fresh onions |
| <input type="checkbox"/> Basil            | <input type="checkbox"/> Fennel         | <input type="checkbox"/> Salad Mix              |
| <input type="checkbox"/> Beets            | <input type="checkbox"/> Green Beans    | <input type="checkbox"/> Shallots               |
| <input type="checkbox"/> Blueberries      | <input type="checkbox"/> Kale           | <input type="checkbox"/> Spinach                |
| <input type="checkbox"/> Broccoli         | <input type="checkbox"/> Kohlrabi       | <input type="checkbox"/> Strawberries           |
| <input type="checkbox"/> Cabbage          | <input type="checkbox"/> Lettuce        | <input type="checkbox"/> Tomatoes               |
| <input type="checkbox"/> Carrots          | <input type="checkbox"/> Onions         | <input type="checkbox"/> Turnips                |
| <input type="checkbox"/> Cauliflower      | <input type="checkbox"/> Pac Choi       | <input type="checkbox"/> Winter Squash          |
| <input type="checkbox"/> Chard            | <input type="checkbox"/> Peppers, hot   | <input type="checkbox"/> Yellow Wax Beans       |
| <input type="checkbox"/> Cilantro         | <input type="checkbox"/> Peppers, sweet | <input type="checkbox"/> Zucchini               |
| <input type="checkbox"/> Cipollini Onions | <input type="checkbox"/> Plums          |   |

### 3. On a scale of 1 to 5, 5 being the best, 1 being the worst, rate the overall *quality* of the produce you received this season:

- 5 (best)
- 4
- 3
- 2
- 1 (worst)

### 4. Which best describes the *volume* of produce received each week:

- More than I / we could use
- Sufficient
- Insufficient

# Appendix 6 (cont.): UCSC Farm CSA Shareholder End-of-Season Survey

## 2014 UCSC Farm CSA End-of-Season Survey *(continued)*

### 5. How interested would you be in a smaller weekly box (avg. \$20/week)?

- Interested – have trouble using all the food provided in the current share size      Other \_\_\_\_\_
- Interested – could better afford a smaller box
- Not interested – prefer the current share size
- Not interested – prefer the amount of food offered, and find a way to share when too much

### 6. How did you find out about our CSA? (multiple choice)

- Friend or colleague
- Friends of the Farm & Garden
- CASFS website
- Brochure
- Local Harvest website
- Other (please specify)

### 7. If you were to recommend our CSA to a friend, what has been the most prominent benefit for you/your family?

### 8. Which scenarios best describe your relationship to the campus? (check only one box)

- I work at UCSC in a staff position
- I/ we are undergraduate students at UCSC
- I work at UCSC in a faculty position
- No affiliation, but live nearby
- I /we are graduate students at UCSC
- None of the above

### 9. Which scenarios best describe your situation? (check only one box)

- I joined the CSA this year
- I have been with this CSA for at least 2 seasons
- I have been with this CSA for 3 or more seasons

### 10. Additional comments about the CSA experience, and improvements you would like to see:

# Appendix 7: Health Insurance Collaborations with CSAs

A potentially revolutionary model for starting and maintaining CSAs that are affordable and accessible is the collaboration that started in Wisconsin in 2005 amongst four regional health insurance companies and the FairShare CSA Coalition. Three of the four companies offer rebates for their customers who join a CSA, which can offset the cost of CSA membership by up to 40%. One of the companies no longer offers rebates but instead gives its members “points” that they can use to earn cash back for healthy habits (one of which is eating fresh food from a CSA).

The program is facilitated by the FairShare CSA Coalition (once known as the Madison Area Community Supported Agriculture Coalition). FairShare handles the vetting and listing of the CSA programs, and connects consumers with CSA and the rebate program. The rebate program has been successful, attracting new customers to the CSAs, and increasing the amount of CSA farms in the FairShare Coalition. As an additional bonus, the program has also resulted in a massive reduction in time that growers spend marketing their program to new customers, and it has expanded their potential consumer audience.

More information can be found on the FairShare Coalitions website:

[www.csacoalition.org/about-csa/csa-insurance-rebate/](http://www.csacoalition.org/about-csa/csa-insurance-rebate/)

and in Jackson, et. al. (2011) in the Resources section of Unit 3.0.



# CSA Administration

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# Lecture 1: CSA Administration

## A. Essential CSA Administration Activities

1. Recruitment, advertisements
2. Correspondence with current membership
3. Billing
4. Information management
  - a) Member contact information
  - b) Distribution of shares
5. Newsletter, website maintenance

## B. Time Required for CSA Administration

1. Time varies depending upon complexity of CSA

## C. Who Does Administrating?

1. Farmer
  - a) Advantages
    - i. Opportunity to build relationships with membership through direct contact
    - ii. Possible with small CSAs
  - b) Disadvantages
    - i. Often impossible to do both farming and administration of CSA. Can lead to reduced quality of work in both areas, reduced capacity to take on more members and generate revenue/living wage for farmer
    - ii. Inadequate skills or lack of desire to manage database and accounting, leading to disorganization and dissatisfaction among membership
2. CSA Office Manager
  - a) Advantage: Dedicated position for managing the communication with members, billing, etc.
    - i. Frees farmer to focus on growing food
    - ii. Opportunity to build relationships between CSA Office Manager and members
    - iii. Often necessary with larger CSAs (recommended for CSAs over 200)
    - iv. Farmer maintains contact via newsletter and special events
    - v. CSA Office Manager can be the bridge between the farmer/s and member
  - b) Disadvantage: Is there enough money to support this position? (Farmers surveyed testified that 'taking the leap' of hiring someone for this position helped their farm grow and become more financially viable in the long run)
3. Members/Volunteers
  - a) Advantage: True community support of agriculture by having members actively participate in overall management of the CSA
    - i. Greater communication, stronger relationships
    - ii. More sustainable for all by having different jobs covered by the members
  - b) Disadvantage: There can be difficulties if the member(s) or volunteer does not do a good job, if high-turn over in volunteer/members, can lead to disorganization

## D. Information Management

1. Information management is most often done by the CSA Office Manager, however the Farmer/s would usually be doing it on smaller-scale CSAs and/or for crop planning, harvest, and record keeping
2. Databases or other software can be valuable tools for tracking information about CSA members, production, and distribution activities
3. Software options:
  - a) FileMaker Pro: The UCSC Farm CSA uses this system to easily track shareholder information, billing, and for printing sign-out sheets
  - b) Excel: Excel can be a great database tool for financial management as well as for crop planning and record keeping. See: [www.cogniview.com/blog/crop-calendars-go-digital-using-spreadsheets-in-agriculture/](http://www.cogniview.com/blog/crop-calendars-go-digital-using-spreadsheets-in-agriculture/)
  - c) Farmigo: The Farmigo System enables CSA members to easily sign-up and pay online for shares as well as an easy way for farms to offer flexible share options. There is also a web store where farms can choose to sell excess items or optional items to be delivered with the share. In addition to member sign-ups and management, the system also helps farms manage the logistics associated with harvesting, packing and delivering shares. It costs 2% of gross sales from the CSA or farm. See: [www.farmigo.com](http://www.farmigo.com)
  - d) CSA Toolbox is an online “toolbox” that offers programs to communicate with your customers, do your paperwork, handle your billing, and take payments. See: [www.csatoolbox.com](http://www.csatoolbox.com)
  - e) CSAware is a customizable, user-friendly Community Supported Agriculture software from LocalHarvest.com designed for CSAs with lots of moving parts. The cost is 2% of sales. See: [csaware.com](http://csaware.com)
4. What data need to be tracked?
  - a) Contact information (see Appendix 1, Example of Shareholder Contact Information)
    - i. Name, address, phone numbers, email address
    - ii. Type of share (whole share, half share, etc.)
    - iii. Pick-up site and day
    - iv. Length of membership
    - v. Shareholder list
  - b) Billing and payment tracking (see Appendix 2, Example of Shareholder Billing Information, and Appendix 3, Example of Financial Report)
    - i. Type of payment (payment in full, installments, monthly)
      - When that person paid/when late
    - ii. Post-dated checks
    - iii. Low-income share, complimentary, or work trade
    - iv. Billing list
    - v. Payment reminders (calls, emails)
5. Crop Planning, Harvest, and Packing schedules
6. Sign-out sheets for tracking pick-up for drop-off locations (in order to track who didn't pick up)

## E. Distribution of Shares

1. Types of distribution
  - a) On-farm pick-up models
    - i. Already packed in boxes for people to pick up

- ii. "Farmers' Market Style," with produce displayed on table and consumers weigh and pack their own boxes
- 2. Off-farm pick-up models
  - a) Consumer picks up packed boxes at farmers' markets
  - b) Grower drops boxes at different pick-up sites (churches, homes, work sites, schools, etc.) where consumers can pick up during a several-hour window
  - c) Grower produces and ships in bulk to urban distribution hub. Members pack and redistribute to neighborhood clusters, where members rotate pack and distribution responsibilities.
- 3. Things to consider in both on- and off-farm pick-up cases:
  - a) Where will people park?
  - b) How will this affect the neighborhood (traffic, noise, etc.)?
  - c) Set up, monitoring, breaking down (will someone be there the whole time?)
  - d) Surplus and Exchange tables (have a trade basket so folks can leave what they won't eat and perhaps trade in for something they like better)

# Appendix 1: Example of Shareholder Contact Information

*UCSC Farm CSA*

- Main Menu
- Billing Info
- Contact List

## Shareholder Information

Primary Shareholder :	<input type="text" value="Susie"/> First Name	<input type="text" value="Shareholder"/> Last Name	Entered : <input type="text" value="5/12/2014"/> Last Modified : <input type="text" value="Mar-26-15"/> Modified By : <input type="text" value="Amy Bolton"/>
Mailing Address :	<input type="text" value="1234 Farmscape Way"/> Street		<input type="button" value="Cancellation Info"/>
	<input type="text" value="Anytown"/>	<input type="text" value="CA"/> <input type="text" value="95060"/>	
	<input type="text" value="(831)555-5555"/> Phone	<input type="text"/> Alternate Phone	
	<input type="text" value="Susie@email.com"/> E-mail Address		Member Since : <input type="text" value="Jan 10"/> Share Type : <input type="text" value="Full"/> Billing Level : <input type="text" value="Standard"/>
	Co-shareholders : <div style="border: 1px solid black; height: 80px; width: 100%;"></div>		

<p>Start Date This year : <input type="text" value="Tuesday, June 3, 2014"/></p> <p>Member Notes : <div style="border: 1px solid black; height: 80px; width: 100%;"></div></p> <p>Winter Solstice Box <input type="text"/></p> <p>Bouquet Add on</p> <p style="margin-left: 20px;">coshare name</p> <p style="margin-left: 20px;">coshare email</p>	<p>Usual Pick-up Day/Site : <input type="text" value="Tuesdays/Farm"/></p> <p>Temp Pick-up Day : <input type="text"/></p> <p>As Of When? <input type="text"/></p> <p>Until When? <input type="text"/></p> <div style="border: 2px dashed black; padding: 5px;"> <p>Switch Pick-up ? <input type="text" value="No"/></p> <p>Current Pick-up : <input type="text" value="Tuesdays/Farm"/></p> </div>
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# Appendix 3: Example of Financial Report

PS Full Name	Ck Num	Ck Date	Date Rec'd	Payment Amt.	Donation Amt.	Total Due	Total Payments
Fred Shareholder	1485	1/31/14	2/7/14	140.00		560.00	560.00
Carolyn Shareholder	3638	2/10/14	2/14/14	280.00		560.00	560.00
Bill Shareholder	1720	2/28/14	3/3/14	560.00	280.00	560.00	560.00
Rebecca Shareholder	3766	3/18/14	3/20/14	560.00		560.00	560.00
Melanie Shareholder	3781	12/20/13	3/25/14	560.00		560.00	560.00
Karen Shareholder	5807	5/3/14	3/25/14	560.00		560.00	560.00
Sylvia Shareholder	3007	3/13/14	4/1/14	560.00		560.00	560.00
Roberto Shareholder	1225	3/28/14	4/3/14	280.00		560.00	560.00
Deborah Shareholder	9631	3/29/14	4/4/14	560.00		560.00	560.00
Phil Shareholder	6607	4/1/14	4/6/14	280.00		280.00	280.00
Andrea Shareholder	3893	4/8/14	4/15/14	280.00		560.00	560.00
Sergio Shareholder	9836	3/27/14	4/20/14	560.00		560.00	560.00
Ron Shareholder	1102	4/15/14	4/25/14	560.00		560.00	560.00
Kristen Shareholder	2553	4/30/14	5/1/14	280.00		280.00	280.00
Wendy Shareholder	5499	4/28/14	5/3/14	560.00		560.00	560.00
Stefanie Shareholder	679	5/1/14	5/7/14	280.00		560.00	560.00
Maria Shareholder	8159	5/5/14	5/9/14	280.00		560.00	560.00
Jessica Shareholder	1921	5/3/14	5/10/14	140.00		560.00	560.00
Andrea Shareholder	1857	5/10/14	5/18/14	560.00		560.00	560.00
Heidi Shareholder	1083	5/15/14	5/20/14	240.00		560.00	560.00



# CSA Crop Planning

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# Lecture 1: CSA Crop Planning

## A. The Need for Crop Planning in CSA Production

As many CSA operations provide a great diversity of produce in each share throughout the season, a crop plan becomes an essential planning tool for creating and maintaining efficiency and timeliness of cropping in order to meet harvest goals

1. To grow a diversity of crops well, the grower essentially develops a mini-plan for each crop grown each year—projecting yields, deciding planting dates, row or bed feet needed, seed amounts needed, dates to maturity, best varieties, etc.
2. Crop planning is an iterative process, refined many times, and from various angles. Two primary vantage points are 1) setting harvest goals by date, i.e., envisioning what you will be growing for the CSA and when it will be harvested, and 2) creating a planting plan that will get you there.
3. The best way to develop accurate projections for a particular farm is to maintain planting and harvest records, and use this information as the basis for future decision making
4. Succession plantings, or repeated plantings, are driven by the harvest period that a crop “stands” in the field. For many fresh vegetables, the interval is approximately two weeks from first harvest to loss of quality due to the crop bolting, becoming oversized, tough, bitter, etc.
5. In planning for a CSA, succession plantings often become “block plantings” completed on the same day, or over two days, often with transplanted crops alongside direct sown crops. “Blocking ” crops together will create efficiencies with field preparation, irrigation, and timeliness of weed control.
6. Planting on a schedule has a tremendous benefit in terms of ensuring that plantings happen in successive fashion, and are not delayed
7. It can be very helpful to see planting dates laid out in a spreadsheet format, where the time interval between successions is easily noted—for example, being able to see if one week or two (or three) have passed between plantings
8. The number of shares will depend on land available (acreage and fertility), farming expertise, financial resources, etc. A reasonable starting point would be 20 shares per acre.

## B. Developing and Implementing a Crop Plan for a CSA Operation

1. Generate a crop list
  - a) Think about balance in the offering each week, and over the season. One way to organize the crop list is to categorize crops according to how foods will be used in meal prep, e.g. salad greens, cooking greens, fresh herbs, root crops, summer fruiting crops like beans and tomatoes, calorie foods like potatoes and winter squash, tree fruit and berries.
  - b) Reality test your crop list against conditions of climate, land, and water availability. For example, not every farm would have the heat to grow eggplant or the cool conditions needed to grow lettuce. With sandy soil you’ll be encouraged to grow more carrots than on clay ground.
    - i. Visiting local farmer’s markets, if they exist, can be a good way to get a sense of the seasonality of crops in your area, and basic list of potential crops and typical harvest dates
  - c) Consider labor available/needed at different times in the season, and infrastructure such as washing and packing facilities, dry storage, and refrigerated space

2. Categorize the crop list according to plant life cycles
  - a) **Storable crops, single planting/single harvest crops** – These crops can be either directly sown or transplanted. They are typically planted en masse on one planting date and are later harvested en masse once they have reached maturity, to optimize factors associated with ideal planting dates and ideal harvest dates, as well as proper handling and storage once harvested.
    - Examples: onions, garlic, potatoes, winter squash, dry beans, dry corn
  - b) **Non-storable, single or few plantings/extended harvest crops** – These crops, once they reach maturity, continue to yield over an extended period of time (4 to 5 weeks, or more). Generally, these are fruiting crops, and some of the more sturdy greens.
    - Examples: tomatoes, peppers, eggplant, zucchini, cucumbers, pole beans, peas, chard, kale, collards. These crops can be either directly sown or transplanted.
  - c) **Transplanted, succession plantings/succession harvest crops** – These crops have relatively short cropping cycles and small harvest windows, requiring regular and repeated sowings to ensure a continuous supply
    - Examples: lettuce, broccoli, cabbage, cauliflower, scallions, leeks, fennel. These crops are most often transplanted.
  - d) **Direct sown succession plantings/succession harvest crops** – These crops have relatively short cropping cycles and small harvest windows, requiring regular and repeated sowings to ensure a continuous supply. Crops on this list are direct sown due to a number of factors: either do not take well to transplanting (are tap-rooted), or are quick to bolt from transplant, or are planted in high density for bunching, or are planted on very large acreages, costly to transplant.
    - Examples: salad mix, spinach, arugula, broccoli raab, choy, carrots, beets, turnips, radishes, cilantro, dill, bush beans, corn, melons
3. Create a sowing schedule to meet production goals
  - a) Knott's Handbook for Vegetable Growers (see Resources, Unit 3.7) and seed catalogues are useful resources for crop planning information such as average yields, plant spacing, seeds per weight, and other specific production data
  - b) Determining specific harvest goals for each crop to be grown: How much of each crop do you need to harvest and at what frequency?
    - i. Question: What is the quantity (in pounds, bunches, heads, etc.) of produce intended for each share and what is the frequency of harvest?
    - ii. What is the total length (in weeks) of the harvest period in the climate in which you wish to grow produce?
    - iii. What is the total number of plants required each week (if applicable) to supply this amount of produce at this frequency?
    - iv. What is the total number of plants required for the season to supply this amount of produce at this frequency?
    - v. Review Appendix 1, Calculating Weekly and Seasonal Harvest Goals, for example of first step in crop planning calculations
  - c) Calculating the number of plants per sowing needed to meet harvest goals
    - i. Determine: What is the average yield per plant? (Or, per 100 ft. row?)
    - ii. Determine: How many plants (or 100 ft. rows) are necessary to meet defined harvest requirements?
    - iii. Determine: How long (in days or weeks) does the crop hold in the ground before declining in quality?
    - iv. For transplants, add 25% more for possible greenhouse problems. This is the total number of plants needed for each sowing.

- v. Review Appendix 2, Calculating the Number of Plants Per Sowing Required to Meet Harvest Goals
  - d) Determining the specific sowings dates throughout the season that are needed to achieve the harvest goals you have established for each crop
    - i. How long from sowing does it take on average for the crop to reach a harvestable stage of maturity?
    - ii. What is the very first sowing date in your climate?
    - iii. Planting dates will be subject to change in many areas due to climate change effects
    - iv. Review Appendix 3, Determining First, Last, and Frequency of Sowing Dates
  - e) Calculating the number of sowings needed per season to meet specific harvest goals
    - i. Define the first sowing date and last harvest dates possible based on climate (i.e., soil and air temperatures). This will determine first distribution day and the availability of season extension.
    - ii. Days to maturity: How many days (on average) are required for the crop to reach maturity?
    - iii. Determine: How long (in days or weeks) does the crop hold in the ground before declining in quality?
    - iv. Define timing/frequency of sowings: For continuous supply of succession crops, plant no longer than 2 weeks apart. Utilize gaps of 3 or 4 weeks between succession plantings where desired to offer variety in the harvest.
    - v. What is the total number of sowings needed for each crop for the season?
    - vi. Review Appendix 4, Calculating the Number of Sowings Required Per Season to Meet Specific Harvest Goals
  - f) A sowing schedule can be a useful living document if updated throughout the season, recording sowings completed and adjusting projections for future plantings
4. Calculating seed costs
- a) For transplanted crops, determine the number of transplants per sowing x the total number of sowings in the season = total seed count to order (add buffer for thinning in greenhouse trays, and greenhouse problems)
  - b) For direct sown crops, use yield estimates per row foot to determine the size of each sowing that will meet production goals. Based on the total number of sowings for the season, order seed to match the total row feet to plant.
  - c) Seed costs are calculated for each unique crop that is planned, and then added up for a total projected seed cost. In the back and forth of crop planning, seed costs may feed back into the decision process step of setting production goals. E.g. if a particular crop variety is very expensive to buy, you may decide to grow less of that crop, and more of another crop in order to stay within an overall seed budget.
  - d) Allow a good amount of time for placing seed orders, and keep detailed notes by crop, so you can build expertise
  - e) Seed prices change frequently, and are calculated by the count and by weight. Allow time for conversions back and forth.
  - f) Under the National Organic Program certification standards, organic seed must be sourced, unless an organic source of the variety you wish to purchase is not commercially available
  - g) Note: Seed potato costs are calculated based on needing 2 to 3 oz of cut "potato seed" per foot planted. Number of cut pieces will vary per 50# or 100# weight depending on the variety (and number of "eyes" per tuber), and generally on the size of the tubers in the sack.
  - h) Review Appendix 5, Calculating Seed Costs

### **C. Using Crop Plans and Harvest Schedules**

1. Accurate planting and harvest records help to determine days to maturity in your specific region and season
2. Crop plans, sowing/transplanting, and harvest schedules serve as a record of crop performance, harvest quality and quantity for later trouble shooting
3. Crop plans, sowing/transplanting, and harvest schedules provide data for variety trials
  - a) See the following appendices
    - Appendix 6: Field Sowings (Direct)
    - Appendix 7: Transplantings
    - Appendix 8: Crop Plan for 100-Member CSA
    - Appendix 9: Examples of Propagation Requirements and Sowing/Planting Schedule for Direct Market and CSA Crops
    - Appendix 10: CSA Crop Harvest Schedules

# CSA Crop Planning Exercise

## INTRODUCTION

*In the following exercise you will develop a simple crop plan for four crops that would be produced for a 100-member CSA operation.*

*The exercise introduces you to the essential steps used in developing a crop plan for a working garden or small farm. Though the emphasis in this exercise is on crop planning for a CSA operation, the same general principles apply to other types of farming and gardening operations and the same steps are involved.*

## SCENARIO

You have a 100-member CSA operation located on the central coast of California. Your operation distributes weekly shares of vegetables from June 1 to November 1. Harvest and pickup days occur two times each week, with half of the shares being distributed on Tuesdays and the other half on Fridays.

For the purpose of the exercise, you'll grow and supply your members with four different and seasonally available items each week (a simplification for the sake of the exercise.) The climate is frost free from April 1 through December 1. The beds in your field are 300 feet long and are on 36-inch centers; in other words, the center of one bed is 36 inches from the center of the next bed. The spacing of plants in the beds varies from crop to crop, with some beds having two lines of crops and some having one line. Please consult your seed catalogues for recommended plant spacing, seeding rates, days to maturity and other relevant cultural information.

Work with a partner and generate a crop plan for four crops, one from each of the following categories. Please also answer the series of questions listed under "Other considerations" as part of this exercise. A sample lettuce crop plan from the UCSC Farm's CSA program has been included for your review.

## EXERCISE STEPS

### 1. Choose four crops, one from each category below:

- Storage crops, single planting/single harvest crops: onions, garlic, potatoes, winter squash, dry beans, dry corn. These crops can be either directly sown or transplanted.
- Non-storable, single or few plantings/extended harvest crops: tomatoes, peppers, eggplant, zucchini, cucumbers, pole beans, peas, chard, kale, collards. These crops can be either directly sown or transplanted.
- Transplanted, succession plantings/succession harvest crops: lettuce, broccoli, cabbage, cauliflower, scallions, leeks, fennel. These crops are most often transplanted.
- Direct sown succession plantings/succession harvest crops: salad mix, spinach, arugula, broccoli raab, choy, carrots, beets, turnips, radishes, cilantro, dill, bush beans, sweet corn, melons. These crops are most often directly seeded.



## 2. Determine weekly goals for each crop, and generate a projected harvest by week

Choose the four crops, and determine for each one:

- Quantity-specific harvest goals in terms of pounds, heads, or bunches. (e.g. one head of ‘Nancy’ green butterhead per share)
- Frequency of harvest (e.g. every week, or only 3 times in the fall)
- Over what period of time (e.g. June 1 – November 1)?
- Check your goals against what you know is a reasonable maturity for this crop. What weeks/months of the growing season is it actually possible to harvest this crop? E.g. it is not possible in most areas to field cure and harvest winter squash before early fall; sweet peppers may not be red-ripe till fall, etc.
- Check your plan for balance – plan for variety over the season. For example, CSA members may not want beets every week of the summer.

### EXAMPLE

Lettuce

How often: given every week, all 22 weeks of season

Specific goal: 1 head per week

Weekly harvest: 1 head lettuce x 100 shares = 100 harvestable\* heads of lettuce per week.

\*Add 25% for crop loss (insect damage, irrigation or cultivation problems, tipburn, etc.)

$100 \times .25 = 25$  additional plants

$100 + 25 = 125$  plants/week from which to harvest

Seasonal need: 125 heads/week x 22 weeks = 2750 lettuce plants/season in the ground from which to harvest.

**TIP:** It’s helpful to lay out weekly harvest goals in a chart form, before trying to draft a planting plan. Seeing harvest goals by week will help you refine your plan for balance in the crop mix, and meeting conditions of climate and seasonality.

- Make a chart with the crops on the left axis, units of harvest in the first column, and the weeks of harvest in columns going across the page. Pencil in desired harvest dates with an “asterisk.”

For example:

Crop	Unit	Week 1	Week 2	...Week 6	Week 7	...Week 20	Week 21	Week 22
Winter Squash	3#					*	*	*
Cucumber	1#			*	*			
Lettuce	1 head	*	*	*	*	*	*	*
Beets	1 bunch			*	*		*	*

Winter squash: 3# per week – Weeks 17, 18, 19, 20, 21, 22 (6 weeks total)

Cucumbers: 1# per week – Weeks 6, 7, 8, 9, 10, 11 (6 weeks total)

Lettuce: 1 head per week – Weeks 1-22 (22 weeks total)

Beets: 1 bunch per week – Weeks 4, 5, 6, 7, 8, 9, 11, 12, 14, 15, 18, 20, 21, 22 (14 weeks total)

### 3. Determine the size of the sowing needed to meet harvest goals, and number of sowings over the season

How large do the sowings need to be for each succession planted, or for each field dedicated to a long-season single-harvest crop?

- What is the average yield per plant or bed-foot planted? Reference seed catalogs, farming handbooks, online crop planning tools, previous farm records or the advice of seasoned farmers.
- How long does your crop hold in the ground before becoming overly mature and losing quality?
- Over how many weeks will the plant yield?
- For transplants, add an additional 20–25% for greenhouse problems, e.g. poor germination, disease, etc.)

#### Estimating Yields per Crop

The easiest crop yields to estimate are for crops where you harvest the **whole plant**, e.g., one head of lettuce, one head of cabbage.

**Fruiting crops** take more work to estimate. They may produce for only 2 weeks before losing quality (e.g., green beans, sweet corn) or may produce for a long interval, up to 6 weeks for tomatoes and sweet peppers. Or, in the case of winter squash, may have a predictable harvest of 3 fruits of average size all on the same harvest day in fall. E.g., a bush variety of Acorn squash produces 2 fruits per plant, average 3# each, plants direct sown and thinned to 2 foot spacing, rows 36" apart. Or, each plant of sweet corn typically produces 2 harvestable ears over a 2 week period, direct sown, and thinned to 12", rows 36" apart. Or, green beans yield 0.3# per bed foot planted, for two and a half weeks if picked every 3 days.

**Keeping up with harvest** will improve profitability and overall yields achieved on fruiting crops. Plan for best yields, but build in flexibility such that if yields are low, you have food to harvest in other crop rows.

**Bunching greens or bunched root crops** can be estimated working with recommended plant spacing from seed catalogs, and extrapolating logical numbers of bunches from suggested plant density. E.g., cilantro is direct sown at 1–2" spacing, planted 2 lines per bed, estimated harvest 2 bunches per row foot.

**Keep yield records by row foot** periodically for greens and root crops to generate a farm-specific crop planning tool.

**TIP:** An important data point for storage crops is harvestable yield per row foot at time of harvest, e.g., # of potatoes dug per row, number of bins of winter squash collected per row, # of sacks of onions per row. These will be the numbers you can use to compare yields one year to the next, to compare crop varieties one to another, and to test your field conditions against figures in a handbook or crop planning tool. Using sales data on storage crops is another data point, which includes feedback regarding harvest and storage protocols, and effectively moving produce while it is still in the best shape.

## EXAMPLES

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A lettuce plant yields only one harvestable head of lettuce. On average, a mature lettuce crop in this coastal climate will retain its quality in the ground for approximately 10 days (the range is 7 to 14 days depending on weather and variety). If you plant varieties with a range of days to maturity, this will allow you to harvest for two weeks from each succession planting.

With 125 lettuce plants needed each week (see above calculations) and with two weeks of harvest possible from each planting, the number of plants per sowing should include two weeks' worth of harvest.

2 Weeks x 125 plants = 250 plants per sowing

Add in a 20% loss rate for greenhouse problems (poor germination, disease, etc.):

$250 \times 1.2 = 300$  Transplants needed per sowing

We want to have lettuce for 22 weeks, and each sowing will be harvested over 2 weeks. Therefore we will need to plan on eleven sowings.

Bunched beets hold their quality in the ground for about 2 weeks. If planted two lines to a bed, expect to harvest 1 bn per bed foot.

With 100 bunches of beets needed each week of harvest, and harvesting for 2 weeks from one sowing, plant enough row feet to harvest 2 weeks worth, or 200 bn from a sowing.

At 1 bn per bed foot, the calculation is:

200 feet x 1 bn per bed foot = 200 bunches

Add 20% for field problems (poor germination, cultivation damage or pest damage):

$200 \text{ feet} \times .20 = \text{Add } 40 \text{ feet}$

Plan to plant  $200 + 40 \text{ feet} = 240 \text{ feet}$  per sowing

To give beets to the CSA 14 different weeks, plan on 7 sowings of 240 feet over the course of the summer.

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#### 4. Determine a specific planting calendar for the entire season

Research the following question for each crop in your CSA program:

- How long from planting does it take on average for the crop to reach a harvestable stage of maturity?
- Make refinements for season and day length. Growth is accelerated in the 6 weeks before and after summer solstice, June 21st, which is significant for quick crops like salad mix or spinach.
- Note that catalog maturities are climate-specific, and need to be verified at your farm. (E.g., a sweet corn variety listed in Johnny's Seeds as 70 days can take 110 days in the cool summers of the Central Coast.)
- For transplants, use the catalogue maturity plus about one week for calculating maturity in the field. Count day 1 as the greenhouse sowing date. The extra week is to compensate for slow-down in growth at the end of the greenhouse interval, and continuing into the first few days after plant out in the field when roots are establishing. Maturities are more profoundly influenced by day length and temperature than direct sowing vs. transplanting. (Keep planting records and find out typical maturities for a local area according to planting date.)

- Now, make a planting calendar that combines both direct sowing dates and transplant dates. Look at your harvest goals, and count back in time using the estimated days to maturity for each crop. Remember that some of the plantings will generate harvest for more than one week; planting dates will be fewer than harvest dates.
- For storage crops, set only one (or a few) planting dates.
- Once you have planting dates for transplants, generate a greenhouse sowing list. Allow 5 weeks to have most transplants ready for plant-out: 4 weeks to develop a plug, and another week for hardening off. Some crops take longer to produce for plant-out, including tomatoes, peppers, eggplant, fennel, and alliums (7 weeks on average). Sowings near summer solstice will be accelerated.

**EXAMPLE**

To produce lettuce for the whole summer season, transplant every 2 weeks; also sow lettuce in the greenhouse every 2 weeks.

Red Cross variety lettuce is listed in Johnny’s catalog as 48 days. We’ll plan to transplant about 48 days before the first harvest day of June 1st, which would be April 22nd.

Sow in the green house on March 18th, allowing 5 weeks for development of the transplant. Designate planting dates every 2 weeks from April 22nd until about September 1st, allowing for more time to size up in the fall, 60 days instead of 48 days.

Greenhouse sowings would be scheduled March 18th until July 25th (5 weeks before the last planting)

The harvest goals chart can be easily modified to be the planting plan. **TIP:** Using an interval of one week for the harvest goals and planting plan simplifies all of the math and tracking. Simply count backwards from harvest goals in weeks to get planting date. For example, to have beets ready for July 6, where direct sown beets mature in 50 days on the Central Coast, count back approximately seven weeks (=49 days) for a planting date of week of May 18.

For example:

			CSA Week 1	CSA Week 2	CSA Week 3	CSA Week 4	CSA Week 5	CSA Week 6	
		May 18	May 25	June 1	June 8	June 15	June 22	June 29	July 6
harvest	beets								*
plant	beets	*	<<<<<<	<<<<<<	<<<<<<	<<<<<<	<<<<<<	<<<<<<	<<

**5. Determine amount and cost of seed needed to complete the sowings for each crop**

- For direct-seeded crops, refer to seed catalogues for amount of seed needed per row foot, and convert to bed-feet if needed. Using early calculations of amount to sow for each crop, sum up total row feet for the season, and calculate seed needs.
- For transplanted crops, refer back to calculations for amount to sow for each crop, and sum up number of plants needed for the season. Calculate amount of seed needed to fulfill greenhouse sowings for the season.
- Make note of average seed viability per crop. This will inform if surplus seed may be used the following year.

## EXAMPLES

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### **Transplanted**

Say we need 300 lettuce transplants per sowing and a total of 11 sowings:

$300 \times 11 = 3,300$  seeds

Add another 25% for manually seeding trays:  $3,300 \times 1.25 = 4,125$

Order nearest size in catalog, 5,000 seeds of a pelleted lettuce to reduce thinning expense in the trays. Order 5M organic "Nancy" butterhead at \$2.44 per thousand, equals seed cost of \$12.20. Order 5M of another variety of lettuce since seed cost is low, and we want to plant out 2 varieties each planting for overlapping harvests.

### **Direct seeded**

Say we plant 6 sowings of beets, each one equal to a 300' bed with 2 lines of plants.

The seed catalog says 5,000 seeds (5M) sows 333' (row feet, i.e. a single line of plants.)

Double that amount for a bed with 2 rows. Need 10,000 seeds per 300' bed with 2 lines.

6 beds @ 10,000 seeds/bed would be minimum seed need of 60,000 seeds. Order 75,000 to be safe, Red Ace from Johnny's for \$0.99 per thousand, or \$74.25.

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## 6. Additional crop planning considerations

- What equipment is necessary to directly sow or transplant these crops?
- Is equipment available to form or refresh beds throughout the season, or only in spring?
- What are the specific spacing requirements for each of the crops?
- Does the crop need to be thinned after germination? How will this be accomplished? How much time will this take?
- Do any of the crops have specific fertility or harvest requirements?
- What are the post-harvest requirements for the crops?
- What surface area of land would be required to produce all of the four crops?
- What type of irrigation will you use for each crop and why?
- Consider varietal differences—in flavor, tenderness, bolt resistance, insect and disease resistance, and *price of seed*.

# Appendix 1: Calculating Weekly & Seasonal Harvest Goals

## EXAMPLE

### WEEKLY HARVEST REQUIREMENTS

- 2 heads lettuce x 50 full shares = 100 heads total for full shares
- 1 head lettuce x 50 half shares = 50 heads total for half shares
- Total for week (both full and half shares) = \*150 high quality heads of lettuce per week

\*Note: Add in a 25% cull rate for poor quality transplants, crop losses, and for unmarketable crop in the ground

Calculations:  $150 \times .25 = 38$  additional plants.  $150 + 38 = 188$  plants/week from which to harvest the necessary 150 heads

### SEASONAL HARVEST REQUIREMENTS

- Harvest period: June 1 – November 1 = 5 months
- $188 \text{ heads/week} \times 22 \text{ weeks} = 4,136$  lettuce plants/season in the ground from which to harvest

# Appendix 2: Calculating the Number of Plants Per Sowing Required to Meet Harvest Goals

## EXAMPLE

- One lettuce plant yields one head of lettuce
- On average, a mature lettuce crop in a cool coastal climate will retain its quality in the ground for 14 days
- This will allow you to harvest for two weeks from each succession of plantings
- In order to create a small degree of harvest overlap in mature lettuce successive sowings are scheduled at a frequency of 1x/10 days

## CALCULATIONS

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### GIVEN:

- 188 lettuce plants are needed each week (see previous)
- Two weeks of harvest is possible from each planting
- The number of plants per sowing should therefore include two weeks' worth of harvest
- $2 \times 188 = 376$  plants/sowing
- Add in a 25% cull rate for poor germination, disease, etc.
- $376 \times .25 = 94$ ;  $376 + 94 = 470$  total plants needed per sowing
- Standard propagation trays used for lettuce have 120 cells each
- Four cell trays would therefore be required for each sowing, providing a total of  $(120 \times 4) = 480$  transplants/sowing



# Appendix 3: Determining First, Last, & Frequency of Sowing Dates

## EXAMPLE

### Determining First and Last Sowing Dates

- A lettuce crop requires 60 days to mature from the date sown (on average)
- To have a mature crop on your first harvest date of June 4 for example, the first sowing would take place on April 4
- Therefore, the first sowing of lettuce would take place on April 1st (and every 10 days thereafter). The last sowing date would be August 20th for the final harvests at the beginning of November.

### Determining Frequency of Sowings

- To standardize the process we have scheduled our lettuce sowings for 1st, 10th, and 20th of each month (3x/month)

*This date will be determined by when the ground is dry enough for tillage in spring, and when the soil has warmed (except for overwintered crops such as garlic, other alliums, peas, fava beans, etc.)*

- Storage and long-season crops often have a distinct “best” planting date:
  - to increase flavor and sugars, e.g., winter squash
  - to finish or cure before the onset of rain, or a freeze, e.g., potatoes
  - in relation to foliar or soil-borne diseases such that they produce better if planted early, e.g., storage onions.
- Some planting dates have to do with crop/insect pest interactions—e.g., many growers time sweet corn plantings so that the crop matures before the first hatch or migration of corn earworm, *Helocoverpa zea*
- Some planting dates are relative to day length—e.g., bulb onions that bulb with long days; or, asteraceae crops (endive and radicchio) that tend to bolt if transplanted before summer solstice but not after

# Appendix 4: Calculating the Total Number of Sowings Required Per Season to Meet Specific Harvest Goals

## EXAMPLE

- The first and last harvest dates for the CSA are June 4 and November 2, respectively
- Sowings take place every 10 days (the 1st, 10th, and 20th of each month)

## CALCULATIONS

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- $3 \text{ sowings/month} \times 5 \text{ month harvest season} = 15 \text{ sowings total/season}$  are required to meet harvest goals

# Appendix 5: Calculating the Total Number of Transplants Required & Associated Seed Costs

## EXAMPLE

Multiplying the number of transplants per sowing by the number of sowings per season will provide you with the number of transplant and seeds needed to implement your crop plan

## CALCULATIONS

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- 480 transplants/sowing are needed (see Appendix 2)
- 15 sowings/season are required
- $480 \times 15 = 7,200$  transplants/season
- Two seeds are sown into each cell when propagating
- $2 \times 7,200 = 14,400$  seeds needed to produce the lettuce crop for your 100 CSA subscribers
- Seed costs are \$0.96/1,000 seeds.  $\$0.96 \times 14.4 = \$13.80$  + shipping and handling





# Appendix 8: Crop Plan for 100-Member CSA

## (50 full shares, 50 half shares)

CROP	FULL SHARE	HALF SHARE	TOTAL/WEEK	# PLANTS/ SOWING+25% x 2 WEEKS	SPACING	# ROW FEET/ SOWING	SOWING PERIOD EVERY ? DAYS
Basil	100 plants	50 plants	160	300	12 in	150 ft	20
Beans	100 lb	50 lb	150+	1,200	3.5 in	300 ft	10
Beets	250	150	450	1,200	2 in	100 ft	variable
Broccoli	100 heads	50 heads	200	600	12 in	300 ft	10
Cabbage	100 heads	50 heads	160	600	15–18 in	300 ft	20
Carrots	500	300	800+	3,600	1 in thin	150 ft	10
Cauliflower	50 heads	50 heads	100	300	1ft	150 ft	2
Chard	600 leaves	300 - 350	1,000	300	1ft	150 ft	variable
Cilantro	50 lg. Bn.	50 sm. Bn.	variable	15,000 seeds	swath	75 ft	variable
Collards	600 leaves	300–350	1,000	150	1ft	150 ft	1
Corn	300 ears	200 ears	500+	18,000	1 ft	1,800 ft	10 -14
Cucumbers	250	150	500	200	1.5 ft	300 ft	30
Dill	50 lrg. Bu.	50 sm. Bu.	?	15,000 seeds	swath	75 ft	variable
Eggplant	200–300	100–200	500=	600	1 ft	600 ft	1
Fennel	100 plants	50 plants	150	300	6 in	75 ft	variable
Garlic	100	50	150	6,000	4–5 in	1,500 ft	1
Green Garlic	250 plants	150 plants	400	800	3 in	100 ft	1
Green Onions	100 plants	50 plants	150	300	plugs of 10, 6 in	75 ft	4
Hard Squash	100–200	200–300	500	1800	2 ft	5400 ft	1
Kale	600–800 leaves	300–400	1,100	300	1 ft	150 ft	variable
Kohlrabi	100 plants	50 plants	150	300	6 in	150 ft	30
Leeks	250	150	400	1,440	5 in	300 ft	variable
Lettuce	100 heads	50 heads	200	500	double line, 10 in	208 ft	10
Melons	100	50	150	300	2 ft	600 ft	variable
Onions	100	50	350	4,800	6 in	1,200 ft	variable
Parsnips	250	150	400	800	2 in	75 ft	variable
Peppers	200	100	300+	600	1ft	600 ft	1
Potatoes	150–200 lbs	75–100 lbs	300 lbs.+	4,500	8 in	3,600 ft	2
Pumpkins	100	50	150	1,400	2 ft	4,400 ft	1
Radish	400	200	680	1,800	thin 1 in	75 ft	30
Salad Mix	25–50 lbs	15–25 lbs	75 lbs.+	36,000	swath	180 ft	20
Spinach	200 plants	100 plants	300	720	thin to 5 in	150 ft	20
S.Squash	200	100	300	150	2 ft	300 ft	30
Strawberries	100 baskets	50 baskets	150 bks. +	1,650	12 in	900 ft	11
Tomatoes	200 lb	100 lb	300 lb	200	3 ft	600 ft	30
Turnips	250	150	450	1,200	2 in	100 ft	variable

CROP	# SOWINGS	SOWING INFO	SEEDS/CELL* SEEDS/FT**	SEED AMOUNTS	GERMINATION DAYS TO MATURITY	TOTAL BED FEET	
Basil	9	greenhouse*	5	13,500	5 to 10	78	1,350
Beans	9	direct sow**	3.5 seeds/ft	10,800	6 to 16	50	2,700
Beets	11	direct sow	10 seeds/ft	16,500	5 to 17	58	1,100
Broccoli	16	greenhouse	1 to 2	48,000	4 to 20	64	4,800
Cabbage	6	greenhouse	1 to 2	10,800	4 to 20	66	1,800
Carrots	16	direct sow	30 seeds/ft	72,000	N/A	56	2,400
Cauliflower	2	greenhouse	1 to 2	3,000	4 to 20	65, 80	300
Chard	3	greenhouse	1 to 2	2,700	7 to 14	50, 65	450
Cilantro	7	direct sow	200 seeds/ft	105,000	N/A	50, 55	525
Collards	1	greenhouse	1 to 2	250	4 to 20	50	150
Corn	4	direct sow	2 seeds/ft	9,000	4 to 12	80	7,200
Cucumbers	4	combo	2, 1 seed/ft	2,400	3 to 10	58, 65	1,200
Dill	4	direct sow	200 seeds/ft	60,000	7 to 21	40-55	300
Eggplant	1	greenhouse	Flats	2,250	5 to 14	67, 58	600
Fennel	2	greenhouse	2 to 3	1,800	N/A	75	150
Garlic	1	direct sow	2 cloves/ft	6,000	4 to 13	210	1,500
Green Garlic	1	direct sow	3 cloves/ft	800	4 to 13	150	100
Green Onions	variable	combo		6,000	4 to 13	60	300
Hard Squash	1	direct sow	1 seed/ft	5,400	3 to 10	95, 100	5,400
Kale	3	greenhouse	1 to 2	2,700	4 to 20	50, 65	450
Kohlrabi	5	greenhouse	1 to 2	4,500	4 to 20	38, 45	750
Leeks	2	greenhouse	Flats	1,440	4 to 13	75, 90	600
Lettuce	15	greenhouse	2 to 3	22,500	3 to 7	45	3,120
Melons	2	combo	2 to 3, 1 seed/ft	1,800	3 to 10	72	1,200
Onions	2	combo	20 seeds/ft, 2/ft	12,000	4 to 13	95, 100	2,400
Parsnips	2	direct sow	14 seeds/ft	800	N/A	110	150
Peppers	1	greenhouse	flats	2,250	6 to 28	75, 80	600
Potatoes	2	direct sow	1.5 seeds/ft	11,250	N/A	110	6,000
Pumpkins	1	direct sow	1 seed/ft	4,200	3 to 10	85, 95, 110	4,400
Radish	4	direct sow	35 seeds/ft	21,600	3 to 10	30	300
Salad Mix	8	direct sow	200 seeds/ft	300,000	3 to 7	20	1,440
Spinach	8	direct sow	35 seeds/ft	28,800	6 to 12	35, 42	1,200
S.Squash	4	combo	2 to 3, 1 seed/ft	1,800	3 to 10	48, 55	1,200
Strawberries	1	nursery	1 pl/ft	1,650	N/A	120	900
Tomatoes	4	greenhouse	flats	1,000	5 to 14	65	2,400
Turnips	2	direct sow	35 seeds/ft	1,800	1 to 5	40-55	150
<b>TOTAL BED FEET:</b>							<b>59,585</b>

Total acreage: 4.103

\*seeds/cell=propagated in greenhouse

\*\*seeds/ft=direct sown in field

# Appendix 9: Examples of Propagation Requirements & Planting Schedules for Direct Market & CSA Crops

## FIELD SOWING DATES (DIRECT SOWINGS)

	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
Beans		25	15	5 25	15	5	
Beets	25	5 15 25	5 25	15	5 25	15 25	
Carrots	25	5 15 25	5 15 25	5 15 25	5 15 25	5 15 25	
Cilantro		15	5 25	15	15	5	5
Corn			5 25	15	5		
Dill			5	5	15	5	
Onions		5					20
Parsnips		5		5			
Potatoes		15					
Pumpkins			15				
Radish		25	15	5			
Salad Mix			15	5 25	15	5 25	15 25
Spinach			5 25	15	5 25	15	5 25
Squash, Winter			15				
Turnips			5			15	

## NUMBER OF TRANSPLANTS NEEDED PER SUCCESSION:

Basil	400	Eggplant	600
Broccoli	500	Fennel	375
Bunch Onions	375 (6-10 seeds/cell)	Kale	400
Cabbage	400	Kohlrabi	375
Cauliflower	250	Leeks	1440
Chard	400	Lettuce	500
Collards	400	Melons	300
Cucumbers	200	Peppers	900 (300 each)
Eggplant	600	S. Squash	150
Flowers	600	Tomatoes	200



**PROPAGATION TRAY REQUIREMENTS**

<b>CROP</b>	<b>TYPE OF TRAY</b>	<b>#TRAYS/SOWING</b>	<b># SOWINGS</b>	<b>TOTAL</b>
Eggplant	Sowing flat	2	1	2
Leeks	Sowing Flat	2	2	4
Peppers	Sowing flat	4	1	4
Tomatoes	Sowing flat	2	4	8
Bunching Onions	175 speedling	6	5	30
Basil	120 speedling	4	9	36
Broccoli	120 speedling	7	17	119
Cabbage	120 speedling	4	10	40
Chard	200 speedling	2	3	6
Collards	200 speedling	2	1	2
Cucumbers	2" 72 speedling	4	1-2	4-8
Eggplant	50 cell plug tray	16 (8 each)	1	16
Flowers	50 cell plug tray	10 (2 of each)	2	20
Kale	200 speedling	2	3	6
Lettuce	216 green tray	2	17	34
Melon	2" 72 speedling	5	1	5
Peppers	50 cell plug tray	10	1	10
Summer Squash	2" 72 speedling	3	1-2	10
Tomatoes	50 cell plug tray	5	4	20

In this example, the column labeled “sown” can be used in the greenhouse to check off when done. Calculations of the number of plants needed are done on a separate spreadsheet or in a formula based on spacing and harvest needs.

Date Sown	Crop	Variety	# Flats	Flat Size	# of Plants Needed	Bed Feet	# Rows / Spacing	Notes
Feb. 1	Tomatoes, Red Slicing	Early Girl	70	72	5000		5000	
	Tomatoes, Gold Cherry	Sungold	5	72	360	360 ft		
Feb. 15	Broccoli	Blue Wind	7	400	2800			
	Onions, Yellow	Bridger	15 flat		7500			
March 1	Carrots	Bolero		Direct		900 ft	3 rows	Flame Weed
	Artichokes	Imperial Star	18	72	1300			
	Tomatoes	Early Girl	50	72	3600			
	Beets, Red	Red Ace		Direct		900 ft	3 rows	Flame Weed

In this example, calculations are made in a separate spreadsheet.

Date Sown	Crop	Variety	Row Feet	# of Plants Needed	Flat Size	Flats Needed	Beds	Notes
April 5	Greens	Joi Choi	600	600	72	8	1	
	Tomatoes	New Girl	200	100	50	3	1	Sow into 50s, on heat mats
	Swiss Chard	Bright Lights	1400	1400	128	11	3.5	
April 12	Cabbage	Gonzales	400	400	72	6	1	
	Kohlrabi	Kohlribri	600	600	128	5	1	3 seeds per plug
	Greens	Fiero	600	600	128	5	1	

In this example, crops are organized alphabetically. Before each sowing, a list of the day's sowings would be made and recorded in the Greenhouse: "T" in Greenhouse sowing date column refers to "tray."

Crop	Variety	Order #, Quantity	Ordered From	Greenhouse Seeding Date	Direct Seeding Date	Total Beds	Notes	Spacing
Basil	Genovese	9119P, 16M	J	9T (200's): 4/6, 5/18, 6/1,	10	10		
				6/15, 7/13, 7/27				
				5T (200's): 4/20, 5/4 12T (200's): 6/29				
Beets	Red Ace	112, 110M	J	20T: 3/30	2B: 4/21, 5/19, 6/9, 6/23	14	Reserve 5 beds for Winter Share	
Broccoli	Blue Wind	2812, 5M	J	6T: 4/12, 5/10, 5/31, 6/21,	13	13	Blue Wind & Violet Queen: Plant early under remay, uncover and hoe, recover	
				7/12				
				Arcadia 139, 5M J 6T: 5/10, 5/31, 6/21, 7/12				
Brussel Sprouts	Diablo	334B, 1C+2B	F	10T: 5/31	5	5		3 rows 18"
				Green Magic 283, 2M J 6T: 5/10, 5/31				
Cabbage	Super Red 80	16P, 1M	J	5T: 5/3, 5/31		9		3 rows 18"

# Appendix 10: CSA Crop Harvest Schedule

CROP	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER
Apples					
Basil					
Beans					
Beets					
Broccoli					
Cabbage					
Carrots					
Cauliflower					
Chard					
Cilantro					
Collards					
Corn					
Cucumbers					
Dill					
Eggplant					
Fennel					
Garlic					
Green Garlic					
Green Onions					
Hard Squash					
Kale					
Kiwis					
Kohlrabi					
Leeks					
Lettuce					
Melons					
Onions					
Parsnips					
Pears					
Peppers					
Plums					
Potatoes					
Pumpkins					
Radish					
Salad Mix					
Spinach					
S. Squash					
Strawberries					
Tomatoes					
Turnips					

# CSA Harvest and Post Harvest Handling

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# Lecture 1: CSA Harvest and Post-Harvest Handling of Fruit and Vegetable Crops

## A. Importance of Skillful Harvesting and Post-Harvest Handling

1. Crop quality and the success of direct marketing farming businesses. A primary attraction of direct marketing outlets for many consumers is high quality produce. Sound produce harvesting, post-harvest handling, and packaging will preserve the quality of produce, which is critical to the success of any market farm or CSA operation.
2. The influence of harvest and post-harvest handling on the aesthetics, flavor, texture, and shelf life of produce
3. Post-harvest handling, long-term storage and nutrition
  - a) Post-harvest handling and long-term storage of onions, garlic, winter squash, potatoes, etc.
  - b) The influence of post-harvest handling on the nutrient profile of perishable crops
4. Harvest and post-harvest practices impact on food safety and farmers' liability (see Unit 7, Food Safety, for more information)
5. How the quality of the final product is impacted by cultivar selection, and growing methods, techniques, and skills; how decisions made around production impact the quality of the produce
6. Information on which post-harvest practices and techniques are allowable under organic systems

## B. General Pre-Harvest Guidelines: When to Harvest

1. Harvesting crops at peak maturity and quality (see Appendix 1, Handling Information for Fruits and Vegetables, and Appendix 2, Suggested Displays and Storage Groups for Selected Vegetables)
2. Time of day to harvest: Most crops (with the exception of dry storage crops) are best harvested in the cool of the morning to avoid moisture stress at time of harvest and preserve marketability
  - a) For storage crops: Often the best time to harvest is after the dew has dried, as the crops should be dry when put into storage
3. Crop turgor, soil moisture, and irrigation considerations prior to harvest (see Appendix 3, Estimating Soil Moisture by Feel)
  - a) Leafy crops (e.g., lettuce, carrots, beets, spinach, greens, etc.): Check soil irrigation-sensitive crops the day before harvest and irrigate as necessary to have crisp crops in the morning. Soil should be at 75% of field capacity to assure good turgor pressure and avoid soil compaction due to wet soil. Irrigating 24 hours prior to harvest is often ideal.
  - b) Storage crops (e.g., onions, garlic, potatoes, winter squash, etc.): Soil and crops should be thoroughly dry prior to harvest and storage.
4. Factoring in time needed for cooling, cleaning, processing, packaging, labeling, transportation, etc., relative to the labor available to complete specific tasks

## C. Considerations for Individual CSA Harvests

1. Define the amounts needed for each full and half share (see Appendix 4, CSA Harvest Amounts for Full and Half Shares)
2. Define total volume of produce needed for a given harvest for all shares (e.g., 50 bunches of carrots, 150 lbs potatoes, etc.)

3. Estimate yield per bed foot (e.g., 200 lbs carrots/100 foot bed) to plan harvest sessions
4. Maximize harvest volume by using specific harvesting techniques
  - a) Harvest throughout an entire planting and select for optimal maturity rather than harvesting from one section of a given planting (e.g., sweet corn, tomatoes, fresh beans, cut flowers, summer squash, etc.)
  - b) Harvest certain crops (e.g., carrots) all at once from a mature section, with immature carrots culled or bunched in large quantities
5. Maximize efficiency by completing tasks in the field (such as bunching, trimming, etc.)

#### **D. Small Group Field Demonstrations**

A review of harvesting and post-harvest skills and practices (see Appendix 1, and Appendix 5, Harvest and Post-Harvest Handling Practices) to be done in the field

1. Assessing the maturity and quality of each crop
  - a) Define/describe and provide examples of selection criteria used to determine whether a given crop has reached harvestable maturity
  - b) Define how much of a given planting/crop is currently mature
  - c) Estimate next harvest interval (for example: more beans ready in three days)
  - d) Assess the maturity of subsequent plantings (if available)
2. Tools and techniques used for harvesting each crop
  - a) Demonstrate tool safety and efficiency of use when cutting, pulling, or digging specific crops for harvest
  - b) Discuss and demonstrate harvesting containers used for each crop
  - c) Demonstrate mechanical harvesting techniques (if available)
3. Demonstrate and describe the post-harvest handling for each crop (see Appendices 1 and 5)
  - a) Harvest temperature: All crops should be kept cool once harvested by placing in the shade or refrigeration
  - b) Washing: Once harvested, nearly all crops require washing by either spraying with water or dunking to remove soil and/or reduce “field heat” (see below). The exceptions to this rule include onions, garlic, hard squash, sweet corn, tomatoes, beans, melons, basil, all berries and tree fruit crops.
  - c) Removing field heat: The term “field heat” refers to the heat stored in crops from being out in the sun. In harvest and post-harvest handling you want to reduce/remove the field heat in your crops to ensure better storability and crop quality.
  - d) Humidity and post-harvest handling
  - e) Post-harvest handling for crop sensitivity to ethylene gas
  - f) Demonstrate, describe post-harvest handling of dry storage crops (e.g., onions, garlic, hard squash, potatoes, etc.)
  - g) Demonstrate packing/packaging styles by crop (bunching, bagging, stacking, etc.)

#### **E. Packing for CSA**

1. Common packing sequence for mid to large CSA operations
  - a) Pre-harvest and pack less perishable crops (e.g., tomatoes) and dry crops (e.g., garlic, onions) on the day prior to distribution. Fresh harvest, pack, and distribute highly perishable items on the day of distribution.
  - b) Consider using a packing paper sheet (which can be dipped in water multiple times) on top of your CSA pack, to keep vegetables moist in box
2. Packing CSA shares for presentation and post-harvest quality (see Appendix 2)



3. Other forms of CSA pack
  - a) Pack your own: Shareholders select produce from bulk with posted quantity list at pick-up site
  - b) Pick your own: Shareholders harvest their own produce from field using quantity list
  - c) Harvest in bulk: Shareholders divide produce into individual shares and distribute
  - d) Harvest prior to day of distribution and refrigerate

## **F. Harvest Record Keeping**

1. The role of harvest records (see Appendix 6, Sample CSA Harvest Record)
  - a) Soil fertility management and variety trial assessment tool—tracking yields from a given field or crop variety
  - b) Helps to define regional harvest period by recording first and last harvest dates for crops
  - c) National Organic Program standards for tracking produce sales to point of origin
  - d) Tracks quantities of produce per share for use in making adjustments to share size when yields have been previously low or high
  - e) Tracks retail value of CSA shares in order make future price adjustments, if necessary
  - f) Useful to compare harvest records against production management records to identify how growing practices impact yields (e.g., seeding, irrigation, weeding, temperatures, etc.)

## **G. Managing a Harvest Crew**

1. What is the critical information that a manager must convey to the harvest crew?
  - a) Accurately assessing maturity
  - b) Harvesting tools and techniques
  - c) Efficiency and safety
  - d) Proper ergonomics to reduce chance of injury: bending, lifting, repetitive motion concerns
  - e) Post-harvest handling strategy for each crop
  - f) Packing for each crop
  - g) Food safety considerations, e.g., personal hygiene (hair, skin, nails, contagious illnesses); see Unit 7, Food Safety on the Farm, for additional information

# Resources

## PRINT RESOURCES

Bachman, Janet, and Richard Earles. 2000. *Post-Harvest Handling of Fruits and Vegetables*. Appropriate Technology Transfer to Rural Areas (ATTRA) [attra.ncat.org/attra-pub/summaries/summary.php?pub=378](http://attra.ncat.org/attra-pub/summaries/summary.php?pub=378)

*Covers post-harvest practices suitable for small-scale operations, and points out the importance of production and harvesting techniques for improving quality and storability. Various methods for cooling fresh produce are discussed, and resources are listed for further information, equipment, and supplies. Available in print or as free downloadable pdf.*

Blanchard, Chris. 2013. *Post-Harvest Handling Decision Tool*. Leopold Center for Sustainable Agriculture and Iowa State University Extension Value Added Agriculture Program. [www.leopold.iastate.edu/sites/default/files/pubs-and-papers/2013-11-post-harvest-handling-decision-tool.pdf](http://www.leopold.iastate.edu/sites/default/files/pubs-and-papers/2013-11-post-harvest-handling-decision-tool.pdf)

*The information in this guide was developed from case studies of three Midwest farms, and summarizing practices used at another seven farms. Guidelines are offered by different crop types, as each has different considerations.*

Flores, Rolando A., and Karen L. B. Gast. 1997. *Storage Option: Fruits and Vegetables*. Cooperative Extension Service, Kansas State University. [www.rivervalley.ksu.edu/DesktopModules/ViewDocument.aspx?DocumentID=10314](http://www.rivervalley.ksu.edu/DesktopModules/ViewDocument.aspx?DocumentID=10314)

*Provides plans for building several types of vegetable coolers*

Growing for Market

*Growing for Market is a national monthly newsletter for direct market farmers. Written by growers, it covers all topics relating to growing and marketing produce, herbs, and cut flowers. See: [www.growingformarket.com](http://www.growingformarket.com)*

Hardenburg, Robert, et al. 1986. *The Commercial Storage of Fruits, Vegetables, and Florist and Nursery Stocks*. USDA Handbook No. 66. United States Department of Agriculture, Agricultural Research Service.

Maynard, Donald N., and George J. Hochmuth. 2006. *Knott's Handbook for Vegetable Growers, Fifth Edition*. Hoboken, NJ: John Wiley and Sons Ltd.

*An excellent growers' reference text with abundant information and charts on yield, harvest, and post-harvest handling of fruits and vegetables for market farmers.*

NRAES, 1992. *Produce Handling for Direct Marketing*. Natural Resource, Agriculture, and Engineering Service (NRAES), NRAES-51.

*For growers selling seasonal produce at farmers' markets and roadside stands. Describes post-harvest physiology, food safety, produce handling from harvest to storage, refrigeration, produce displays, and specific handling recommendations for over 40 fruits and vegetables. Available at [www.nraes.org](http://www.nraes.org).*

Suslow, Trevor. 2000. *Postharvest Handling for Organic Crops*. University of California, Division of Agriculture and Natural Resources, Publication 7254. [anrcatalog.ucdavis.edu/pdf/7254.pdf](http://anrcatalog.ucdavis.edu/pdf/7254.pdf)

Thompson, James, et al. 1998. *Commercial Cooling of Fruits, Vegetables, and Flowers*. University of California, ANR Publications # 21567.

*Detailed descriptions of proper temperature management for perishables and commercial cooling methods. Complete discussion of design for hydro-cooler and forced-air cooler systems, the two most commonly used cooling methods. 25 graphs and illustrations, 11 color plates, and 15 tables. Available from [anrcatalog.ucdavis.edu](http://anrcatalog.ucdavis.edu).*

Wills, Ron, Barry McGlasson, and Doug Graham. 2007. *Post-Harvest: An Introduction to the Physiology and Handling of Fruit, Vegetables and Ornamentals, 4th Edition*. University of New South Wales Press,

*A comprehensive post-harvest physiology text. Many useful charts and concepts for direct produce marketers to consider.*

Wilson, L. G., M. D. Boyette, and E. A. Estes. 1995. *Postharvest Handling and Cooling of Fresh Fruits, Vegetables and Flowers for Small Farms*. Leaflets 800-804. North Carolina Cooperative Extension Service. [www.ces.ncsu.edu/depts/hort/hil/post-index.html](http://www.ces.ncsu.edu/depts/hort/hil/post-index.html)

## WEB-BASED RESOURCES

California Certified Organic Farmers

[ccof.org](http://ccof.org)

*Lists easily accessed USDA National Organic Program (NOP) standards manual, which includes post-harvest treatment considerations*

Kansas State University Research and Extension

[www.ksre.ksu.edu](http://www.ksre.ksu.edu)

*Use the search function to access a wide variety of materials on harvest and post-harvest handling, including extensive information on cut flower handling*

Organic Materials Review Institute (OMRI)

[omri.org](http://omri.org)

*Includes lists of acceptable post-harvest treatments*

UC Davis Post-Harvest Technology

[postharvest.ucdavis.edu](http://postharvest.ucdavis.edu)

*Includes produce fact sheets, a list of short courses and websites, research activities, a bookstore, newsletter, and links to other useful websites.*

UC Small Farm Program

[sfp.ucdavis.edu](http://sfp.ucdavis.edu)

*Use the search function to access information on harvest and post harvest handling on the small farm, including crop-specific information and food safety considerations.*

# Appendix 1: Handling Information for Fruits & Vegetables

CROP	RELATIVE PERISH-ABILITY <sup>1</sup>	DESIRABLE HARVEST QUALITY	OPTIMUM STORAGE CONDITIONS		CHILLING <sup>2</sup> SENSITIVE?	COMMENTS
			Temp (°F)	Humid (%)		
Beans, Lima	M	Seeds developed and plump with tender seed coats	40-45	95	Yes	Sprinkle lightly
Beans, pole & snap	H	Seeds immature; crisp pods free from blemishes	38-42	95+	Yes	Sprinkle lightly
Beets	M	Roots firm, deep red, 1.5" to 3" diameter	32	98-100	No	Sprinkle lightly; remove tops
Broccoli	VH	Green heads, flower buds developed but tight	32	95+	No	Sprinkle lightly
Brussels Sprouts	H	Firm sprouts, 1" diameter	32	95+	No	Sprinkle lightly
Cabbage	M	Crisp, firm, compact heads	32	95+	No	Sprinkle lightly
Cantaloupes	M	Stem scar at maturity; skin yellowish tan; sweet, firm flesh with deep color	38-41	95+	Yes	
Carrots	M	Tender, crisp, sweet roots, deep orange	32	95+	No	Sprinkle lightly, remove tops; ethylene exposure may cause bitterness
Cauliflower	VH	Heads with compact, white curds	32	95+	No	Sprinkle lightly
Celery	VH	Stalks with crisp and tender petioles no seed stalks	32	95+	No	Sprinkle lightly
Chard & Collards		Leaves fresh, green, young and tender	32	95+	No	Sprinkle lightly
Corn, Sweet	VH	Kernels plump, sweet, milky, tender	32	95+	No	Sprinkle or top ice
Cucumbers		<i>Pickling:</i> (1-4" long), crisp, green <i>Slicing:</i> (6" long), crisp green	50-55	95+	Yes	
Eggplants		Shiny, deep purple skin; seeds immature	50-55	95+	Yes	Sprinkle lightly

CROP	RELATIVE PERISH-ABILITY <sup>1</sup>	DESIRABLE HARVEST QUALITY	OPTIMUM STORAGE CONDITIONS		CHILLING <sup>2</sup> SENSITIVE?	COMMENTS
			Temp (°F)	Humid (%)		
BEndive & Escarole	VH	Leaves fresh, crisp, and tender, free from discoloration	32	95+	No	Sprinkle lightly
Honeydew Melons	M	Surface waxy, white to creamy white in color; blossom-end springy under moderate pressure; characteristic aroma	45-50	95+	Yes	
Lettuce	VH	Heads compact and firm, fresh, crisp	32	95+	No	Sprinkle lightly; ethylene exposure may cause russet spotting
Mustard & Turnip Greens	H	Leaves tender and crisp; plants without flower stalks	32	95+	No	Sprinkle lightly
Onions, Dry	L	Firm bulbs, tight necks, dry leaf scales	32	65-70	No	
Onions, Green	VH	Crisp, green stalks with long white shanks	32	95+	No	Sprinkle lightly
Parsley	VH	Tender, crisp, green leaves	32	95+	No	Sprinkle lightly
Peas, English	VH	Seeds developed, but tender and sweet; pods still green	32	95+	No	Sprinkle lightly
Peas, Snow/Chinese	VH	Crisp, tender, green pods; seeds immature	32	95+	No	Sprinkle lightly
Peppers, Green		Crisp, firm, with shiny appearance	50	95+	Yes	
Potatoes, Irish	M	Well-shaped tubers free from sunburn and other defects	55-70	90	Yes	If washed, dry thoroughly
Potatoes, Sweet	L	Firm, smooth-skinned roots free from growth cracks and other injuries	55	90	Yes	All open surfaces should be well healed
Pumpkins	L	Hard rinds, good color; heavy	50-60	60	Yes	
Radishes	M	Firm, crisp roots; red should be bright red, sizes up to 1.25" in diameter	32	95+	No	Remove tops; sprinkle lightly
Rutabagas	L	Firm roots with smooth surface	32	95+	No	Sprinkle lightly
Spinach	VH	Tender leaves, dark green, fresh, crisp	32	95+	No	Sprinkle lightly

CROP	RELATIVE PERISH-ABILITY <sup>1</sup>	DESIRABLE HARVEST QUALITY	OPTIMUM STORAGE CONDITIONS		CHILLING <sup>2</sup> SENSITIVE?	COMMENTS
			Temp (°F)	Humid (%)		
Squash, Yellow and Zucchini	H	Firm, shiny fruits, 4–6" long	50	95+	Yes	
Squash, Acorn	L	Fruits with hard, dark green skin with small, yellowish	50-60	60	Yes	Trim close, allow to heal
Squash, Butternut	L	Fruits with hard, cream-colored skin	50-60	60	Yes	Trim close, allow to heal
Strawberries	VH	Berries firm, plump and red	32	95+	No	
Tomatoes, Green	H	Solid fruit with light green color, mature seeds, and locular jelly	70	95+	Yes	
Tomatoes, Ripe	VH	Solid fruits with uniform pink or red	50-70	95+	Yes	Avoid storage below 50°F
Turnips	M	Firm, heavy roots with good color	32	95+	No	Remove tops; sprinkle lightly
Watermelons, Whole	L	Mature with good flesh color; flesh sweet and crisp	>55	80-90	Yes	Trim stems close to fruit and allow to heal
Watermelons, Sliced (overwrap slices for protection)	H	Mature with good flesh color; flesh sweet and crisp	32	95+		

<sup>1</sup>Relative perishability under good storage conditions: L = Low, M = Moderate, H = High, VH = Very High.

<sup>2</sup>Chilling-sensitive crops should not be stored below their optimum temperature.

*Adapted from Family Farm Series Publications: Marketing for the Small Farmer: Direct Marketing and Quality Control. Used by permission of the University of California Small Farm Center - 5/20/04*

# Appendix 2: Suggested Display & Storage Groups for Selected Vegetables

*Crops within a group are compatible with respect to temperature, humidity, and ethylene sensitivity or production*

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## GROUP 1.

TEMPERATURE = 32°, RELATIVE HUMIDITY = 90-95%, ETHYLENE SENSITIVE OR LOW ETHYLENE PRODUCING

Beets	Cauliflower	Kohlrabi	Radishes
Broccoli	Celery	Lettuce, All Types	Rutabagas
Brussels Sprouts	Swiss Chard	Mustard & Turnip Greens	Spinach, All Types
Cabbage	Collards	Green Onions	Strawberries
Chinese Cabbage	Sweet Corn	Parsley	Turnips
Carrots	Endive & Escarole	Peas, All Types	Sliced Watermelons

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## GROUP 2.

TEMPERATURE = 32°, RELATIVE HUMIDITY = 65-70%, LOW ETHYLENE PRODUCING

Dry Onions

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## GROUP 3.

TEMPERATURE = 50°, RELATIVE HUMIDITY = 90-95%, CHILLING AND ETHYLENE SENSITIVE CROPS

Beans, All Types	Eggplants	Peppers	Zucchini Squash
Cucumbers	Okra	Yellow Squash	

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## GROUP 4.

TEMPERATURE = 50°, RELATIVE HUMIDITY = 90-95%, CHILLING SENSITIVE CROPS THAT PRODUCE ETHYLENE

Honeydew Melons	Muskmelons	Ripe Tomatoes
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## GROUP 5.

TEMPERATURE = 70°, RELATIVE HUMIDITY = 60-80%, CROPS THAT ARE TOLERANT TO HIGHER TEMPERATURES

Irish Potatoes	Sweet Potatoes	Mature Green Tomatoes	Watermelons
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## GROUP 6.

TEMPERATURE = 70°, RELATIVE HUMIDITY = 60-80%, CROPS TOLERANT TO HIGHER TEMPERATURES AND LOWER HUMIDITIES

Dry Onions	Pumpkins	Acorn & Butternut Squash	Watermelons
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# Appendix 3: Estimating Soil Moisture by Feel

SOIL MOISTURE LEVEL (% OF FIELD CAPACITY)	COARSE (SAND)	LIGHT (LOAMY SAND, SANDY LOAM)	MEDIUM (FINE, SANDY LOAM, SILT LOAM)	HEAVY (CLAY LOAM, CLAY)
<b>0–25%</b> No available soil moisture. Plants wilt.	Dry, loose, single grained, flows through fingers. No stain or smear on fingers.	Dry, loose, clods easily crushed and will flow through fingers. No stain or smear on fingers.	Crumbly, dry, powdery, will barely maintain shape. Clods, breaks down easily. May leave slight smear or stain when worked with hands or fingers.	Hard, firm baked, cracked. Usually too stiff or tough to work or ribbon <sup>1</sup> by squeezing between thumb or forefinger. May leave slight smear or stain.
<b>25–50%</b> Moisture is available, but level is low.	Appears dry; will not retain shape when squeezed in hand.	Appears dry; may tend to make a cast <sup>2</sup> when squeezed in hand, but seldom will hold together.	May form a weak ball <sup>2</sup> under pressure but will still be crumbly. Color is pale with no obvious moisture.	Pliable, forms a ball; will ribbon but usually breaks or is crumbly. May leave slight stain or smear.
<b>50–75%</b> Moisture is available. Level is moderate to high.	Color is darkened with obvious moisture. Soil may stick together in very weak cast or ball.	Color is darkened with obvious moisture. Soil forms weak ball or cast under pressure. Slight finger stain, but no ribbon when squeezed between thumb and forefinger.	Color is darkened from obvious moisture. Forms a ball. Works easily, clods are soft with mellow feel. Will stain finger and have slick feel when squeezed.	Color is darkened with obvious moisture. Forms good ball. Ribbons easily, has slick feel. Leaves stain on fingers.
<b>75% to field capacity (100%)</b> Soil moisture level following an irrigation.	Appears and feels moist. Color is darkened. May form weak cast or ball. Will leave wet outline or slight smear on hand.	Appears and feels moist. Color is darkened. Forms cast or ball. Will not ribbon, but will show smear or stain and leave wet outline on hand.	Appears and feels moist. Color is darkened. Has a smooth, mellow feel. Forms ball and will ribbon when squeezed. Stains and smears. Leaves wet outline on hand.	Color is darkened. Appears moist; may feel sticky. Ribbons out easily, smears and stains hand, leaves wet outline. Forms good ball.

<sup>1</sup>Ribbon is formed by squeezing and working soil between thumb and forefinger

<sup>2</sup>Cast or ball is formed by squeezing soil in hand

See also:

USDA, Natural Resources Conservation Service. 1998. Estimating Soil Moisture by Feel and Appearance. Program Aid Number 1619. [www.nrcs.usda.gov/wps/portal/nrcs/detail/mt/newsroom/?cid=nrcs144p2\\_056492](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/mt/newsroom/?cid=nrcs144p2_056492) and [www.ext.colostate.edu/sam/moisture.pdf](http://www.ext.colostate.edu/sam/moisture.pdf)



## Appendix 4: CSA Harvest Amounts for Full & Half Shares

	HALF SHARE	FULL SHARE
Apples	2-4 each	4-6 each
Basil	1 plant each	2 plants each
Beans	1 pound	2 pounds
Beets	3-4/bunch	5-6/bunch
Broccoli	1 head	2 heads
Bunch Onions	6-8/bunch	12-14/bunch
Cabbage	1 or 1 small	2 or 1 large
Carrots	6/bunch	10/bunch
Chard	6-7 leaves/bunch	12 leaves/bunch
Cilantro	1 small bunch	large bunch
Corn	3 ears	6 ears
Cucumbers	1-2 of each var.	2-4 of each var.
Dill	1 small bunch	large bunch
Eggplant	2-4 each	4-6 each
Fennel	1 each	2 each
Garlic	1 bulb	2 bulbs
Green Garlic	3/bunch	5/bunch
Kale	6-8 leaves/bunch	12-16 leaves/bunch
Kohlrabi	2 each	4 each
Leeks	3/bunch	5/bunch
Lettuce	1 head	2 heads
Melons	1 ea. or 1 small	2 ea. or 1 large
Onions	1 each	2 each
Pears	2-3 each	4-5 each
Peppers/sweet	2 each	4 each
Peppers/hot	2 each	4 each
Plums	4-5 each	6-10 each
Potatoes	1-1/2 - 2 pounds	3-4 pounds
Pumpkins	1 each	2 each
Radish	4/bunch	6-8/bunch
Salad Mix	1/4-1/2 pounds	1/2-1 pounds
Spinach	3/bunch	5/bunch
Squash	2 each	4 each
Strawberries	1 basket	2 baskets
Tomatoes	2 pounds	4 pounds
Watermelon	1 or 1 small	2 or 1 large
Winter Squash	1-2 each	2-4 each
Zucchini	1-2 each	2-4 each

# Appendix 5: Harvest & Post-Harvest Handling Practices

*Adapted from UC Davis Small Farm Center; used by permission*

## **When do you harvest?**

- o Harvesting at optimum maturity is key. Crops that are immature lose water rapidly and don't store well, in addition to not tasting their best. Crops that are over-mature can be tough and starchy, like beans and corn, or too soft and easily damaged, like plums. Both immature and mature crops are subject to decay.
- o Harvesting during the coolest part of the day is important because high temperatures lead to deterioration in highly perishable crops. The term "field heat" refers to the heat stored in crops from being out in the sun. In harvest and post-harvest handling you want to manage for reducing/taking out the field heat in your crops.
- o Harvesting when foliage has dried can be important to minimize the spread of some diseases.

## **How to harvest?**

- o It's critical to handle produce gently. Fingernails can easily cut into crops like summer squash and zucchini, which leads to deterioration. The more steps in the harvest handling, the more cuts, bruising, and abrasions that can occur. Decay and shriveling (water loss) result on damaged produce. It's best to eliminate as many steps as possible between harvesting and getting your produce to your members.
- o Keep harvest containers clean—to minimize spread of disease you can use water containing 70ppm chlorine to rinse containers. Plastic containers are easier to clean than wooden ones.
- o Load harvest containers wisely—don't overpack, this causes bruising. Especially with soft fruit and vegetables like plums, tomatoes, summer squash, stack only two layers high.
- o Use sharp tools—this will make your harvesting much easier and faster, especially with crops like salad mix, broccoli, and lettuce.
- o Keep produce out of the sun as you harvest—Try to place boxes of harvested produce in the shade as you work—this will minimize wilting and heating of the produce which leads to deterioration.
- o Make sure to transport harvest produce gently, whether it's in wheelbarrows, carrying boxes, or driving a truck—avoid vibrations that can cause considerable damage to produce.

## **POST-HARVEST HANDLING**

### **In from the harvest—what now?**

- o The first thing is to get the field heat out of your harvested crop and/or to re-hydrate. How this is done depends on the crop. Leafy greens are usually dunked in water; broccoli is often packed with ice for wholesale—but for CSA, dunking in cold water works fine; carrots and beets are hosed down or put through a root washer. Some crops like potatoes store better if they're not washed but stored in a cool, dry place. Garlic, onions, strawberries, and basil are typical crops that should not be washed or they will deteriorate; rather, they should be stored in a cool, dry place. Basil's roots can be soaked in water or wrapped in wet newspaper to retain freshness.

## Temperature

- o Controlling temperature is the most important thing you can do to slow deterioration and to maintain quality. High temperatures increase decay through water loss. Low temperatures cause chilling injury such as decay, discoloration, loss of flavor.
- o See Appendix 1 of this unit and [sfp.ucdavis.edu/pubs/Family\\_Farm\\_Series/Marketing\\_556/directmk-qual/](http://sfp.ucdavis.edu/pubs/Family_Farm_Series/Marketing_556/directmk-qual/) for a list of ideal temperature ranges for produce storage.

## Humidity

- o Maintaining a humid or moist environment is important for many crops because water loss will cause wilting and shriveling. Misting produce with fresh water can help retain freshness—this can be done during the post-harvest phase, before the product gets to the consumer, at farmers' markets stands, and CSA pick-up sites. Make sure not to mist crops like strawberries, tomatoes, garlic, onions, etc., as a moist environment for these crops will hasten decay and deterioration. Trimming tops of carrots helps reduce water loss and using plastic packaging for crops like salad mix can provide a moist environment and ensure high quality.
- o See Appendix 1 of this unit and [sfp.ucdavis.edu/pubs/Family\\_Farm\\_Series/Marketing\\_556/directmk-qual/](http://sfp.ucdavis.edu/pubs/Family_Farm_Series/Marketing_556/directmk-qual/) for a list of ideal humidity levels.

## Packing

- o Packing shed design can be a critical component in any farming operation. Small to mid-size CSA farms will often pack the day of harvest. The boxes are laid out and packed as the crops come in and are washed. Larger CSA farms will harvest the day before distribution and packing is more of an assembly-line. Some use a conveyor belt—one person places the box on at the start, while others fill the box as it passes by, and finally one person packs the boxes into a refrigerated truck at the end of the line.
- o Things to think about for the ideal packing shed are –
  - equipment: wash tubs, screens, containers, etc.
  - drainage
  - flooring—you don't want to slosh around in mud while you're post-harvest handling and packing your produce
  - shade—keeping the produce out of the sun is critical
  - flow of packing
  - Once you've washed, sorted, and graded your produce and it's time to pack for CSA, farmers' market, etc., make sure not to overpack or underpack your containers, as both can cause unnecessary injury to produce. Make sure to use clean containers to avoid disease and use the containers that are not damaged. Your stack of freshly harvested pears in the cooler won't look so great if even one box has damaged corners. Also make sure that your containers are well ventilated.

## Storage

- o Correct temperature and humidity levels are critical. See Appendix 1 for information.
- o Ethylene gas—often used to ripen produce in larger operations—is dangerous when it causes unwanted ripening. For example, if you want to store kiwis until June, make sure that they are harvested into plastic bags tied tightly and placed in boxes. If one box rots, the ethylene gas released won't affect the other kiwis in the cooler. Make sure to not store ethylene sensitive and ethylene producing crops in the same place.  
See Appendix 2 of this unit for a list of ethylene sensitive and ethylene producing crops.

# Appendix 6: CSA Pack—Presentation & Placement

CROP	PRESENTATION	IDEAL PLACEMENT IN BOX
Apples	Loose or Brown Bagged	Bottom
Basil	Bunched	Top
Beans	Plastic Bagged	Middle
Beets	Bunched	Bottom
Broccoli	Loose	Bottom
BunchOnions	Bunched	Middle/Bottom
Cabbage	Loose	Bottom
Carrots	Bunched or Loose	Bottom
Chard	Bunched	Top
Cilantro	Bunched	Top
Corn	Loose	Bottom
Cucumbers	Loose	Bottom
Dill	Bunched	Top
Eggplant	Loose	Bottom/Middle
Fennel	Loose	Middle/Bottom
Garlic	Loose	Middle/Bottom
G.Garlic	Loose or Bunched	Middle/Bottom
Kale	Bunched	Top
Kohlrabi	Loose	Bottom
Leeks	Loose or Bunched	Middle
Lettuce	Loose or Twist Tied	Middle/Top
Melons	Loose	Bottom
Onions	Loose	Bottom
Pears	Brown Bagged	Middle/Bottom
Peppers/sw.	Loose	Middle/Bottom
Peppers/hot	In Potato Bag	Middle/Bottom
Plums	Brown Bagged	Middle
Potatoes	Brown Bagged	Bottom
Pumpkins	Loose	Bottom
Radish	Bunched	Bottom/Middle
Salad Mix	Plastic Bagged	Top
Spinach	Bunched or Plastic Bag	Top
S. Squash	Loose	Bottom
Strawberries	Basket	Top
Tomatoes	Brown Bagged	Middle
Watermelon	Loose	Bottom
W.Squash	Loose	Bottom
Zucchini	Loose	Bottom

# Appendix 7: Sample CSA Harvest Record

Harvest Week:

Date:

Total number of shares:

CROP/VARIETY	FIELD	TOTAL YIELD	FULL SHARE	HALF SHARE	SURPLUS	PRICE(FULL)	PRICE (HALF)
Apples:							
Apples:							
Apples:							
Basil							
Beans: Blue Lake							
Beans: Yellow Wax							
Beets							
Broccoli							
Bunching Onions							
Cabbage: Savoy							
Cabbage: Red							
Cabbage: Arrowhead							
Carrots: Nelson							
Carrots: SugarSnax							
Chard							
Cilantro							
Collards							
Corn							
Cucumber: Marketmore							
Cucumber: Lemon							
Dill							
Garlic							
Kale							
Kohlrabi							
Leeks							
Lettuce:							
Lettuce:							
Lettuce:							

<b>CROP/VARIETY</b>	<b>FIELD</b>	<b>TOTAL YIELD</b>	<b>FULL SHARE</b>	<b>HALF SHARE</b>	<b>SURPLUS</b>	<b>PRICE(FULL)</b>	<b>PRICE (HALF)</b>
Lettuce:							
Melons:							
Melons:							
Onion							
Parsley							
Parsnips							
Peppers:							
Peppers:							
Peppers:							
Plums:							
Plums:							
Plums:							
Plums:							
Plums:							
Potatoes:							
Radish:							
Salad Mix							
Squash: Zephyr							
Squash: Raven							
Squash: Gold Rush							
Squash: Magda							
Squash: Revenue							
Tomatoes							
Other:							
<b>PRICE PER BOX:</b>							
<b>TOTAL HARVEST VALUE:</b>							