Jim Rider

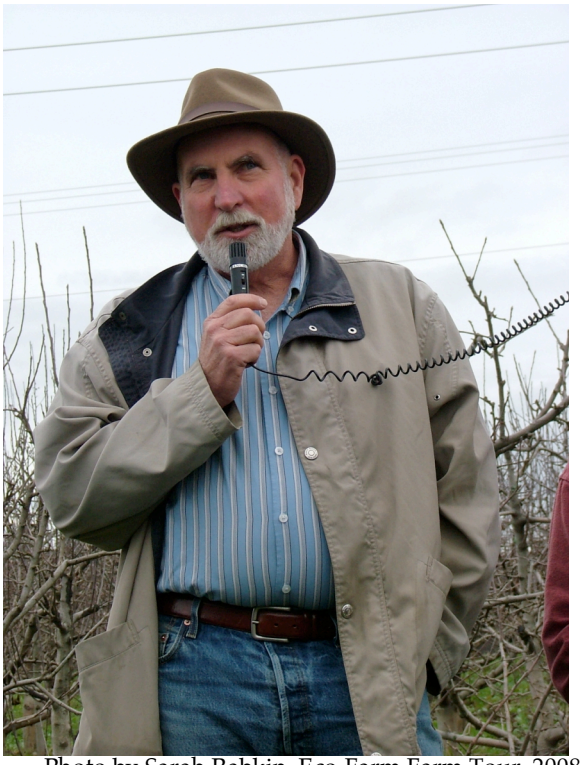

Photo by Sarah Rabkin. Eco-Farm Farm Tour, 2008

Bruce Rider & Sons

As a grower and shipper of organic fresh market apples in Santa Cruz County's Pajaro Valley, Bruce Rider & Sons is currently a rarity. Pressured by the apple industry's shifting economics of scale, many of the valley's formerly abundant orchards have given way to berry fields; others now supply apples only for juicing and processing. Jim Rider grows seventy-five acres of Mcintosh, Honeycrisp, Jonagold, Braeburn, Fuji, and other varieties well suited to the local climate, while his brother Dick runs the company's packing operation, handling some seventy-five percent of the organic apples in California.

A fifth-generation orchardist and experienced horticulturalist, Jim Rider enjoys a reputation as a savvy, innovative grower. He is an adept and enthusiastic grafter, and has made strategic selections to produce a succession of varieties that ripen on the Central Coast when customers in other climates crave them. He saves on labor and equipment by growing on rootstock that yields smaller trees and by keeping the orchards pruned to a maximum of seven or eight feet tall, averting the need for ladders during pruning, thinning, harvesting, and other operations.

Accustomed to making frequent proactive adjustments to ever-changing market and environmental conditions, Rider converted all of his orchards to organic production in the wake of the public awareness over the spraying of Alar on apples in 1989. Rider collaborated with UCSC entomologist Sean Swezey in ten years of organic field research trials; together they pioneered a pheromone-based mating-disruption system to control codling moth infestation. He has also experimented with hedgerows as a method of enhancing biological pest control.

In this interview, conducted by Sarah Rabkin on March 6, 2008, at Jim Rider's Watsonville office, he discussed apple production in the Pajaro Valley, his conversion to organic production, the changing markets for organic apples, his orchard management techniques, the flower business he and his wife ran until recently, and other aspects of his operation.

Additional Resources

Sean L. Swezey, Jim Rider, Matthew R. Werner, Marc Buchanan, Jan Allison, Stephen R. Gliessman, "In Santa Cruz County, Granny Smith conversions to organic show early success," *California Agriculture*, November-December 1994. Volume 48, Number 6, pp. 36-44.

Peggy Townsend, "Tough row to hoe: County apple farmers feel squeeze of weather, corporations," *Santa Cruz Sentinel, at* http://www.diamondorganics.com/rider_brothers

Sean L. Swezey, *Organic Apple Production Manual*. Santa Cruz, Calif: Prepared at the Center for Agroecology & Sustainable Food Systems, University of California, 2000.

Beginnings

Rabkin: This is Sarah Rabkin. It is Thursday, March 6, 2008, and I'm in Watsonville talking with Jim Rider. Let's start by talking a little bit about the history of your family. Do you know when your ancestors first came to this area?

Rider: Yes. My great-great-grandfather came here from the Marysville [California] area. He came out to California for the Gold Rush, and then arrived in the Corralitos area sometime in the 1870s and started a logging business. And then as the logs or the redwoods were cut out, why, then they planted orchards and vineyards on some of the hills.

Rabkin: Where did he come to California from?

Rider: Vermont. The original Rider, the male line, came over to Massachusetts a couple of years after the Mayflower, sometime in 1622 or '23.

Rabkin: Wow.

Rider: Although if you go back and look, why, we all have what, ten, twenty thousand ancestors at that point, (laughs) so there are a lot of other people involved.

Rabkin: And on your mom's side?

Rider: My mom was from southern Virginia, and my parents met in Alaska. It was during the Depression and my dad had gotten a job building levees for the Army Corps of Engineers in Fairbanks, Alaska. My mom initially was studying Spanish and wanted to get a job with the State Department in South America, but

she had a friend who signed up to go to Alaska, and then the joke was she got cold feet (laughs) and then didn't want to go. So my mom went to Alaska.

When the war started, they both moved back to Watsonville, and he enlisted in Officer Cabinet School, to avoid being drafted, I guess. But at the time, his mother's mother was selling a ranch that had been in her family since about the late 1890s. So he bought that. Both he and my mom had been working and saved some money. They were some of the few people who had any money at the time, and they were able to buy this fairly cheaply. So that's how my dad's home place has been in the family for 110 years, or something in that neighborhood.

Rabkin: And when he was growing up, was he helping farm that land?

Rider: Not that land. No. He was helping in farming his dad's property. But again, that was not a particularly good time to be in farming. My grandfather ended up losing most of the family property during the Depression. He bought out relatives to keep the ranch and then couldn't make the payments. My dad didn't have good memories of working on the farm as a kid. So he preferred to start his own business, rather than go into business with my grandfather.

Rabkin: How much land did he acquire?

Rider: It was twenty-five acres.

Rabkin: Had he learned enough to farm that land himself by the time he was buying it? Or did he need to get trained?

Rider: I think he had a pretty good idea of the basics of farming. But actually, after he bought it he was in the Navy for the next three or four years. So his father planted some trees and looked after the place until he got back.

Rabkin: And when and where were *you* born?

Rider: I was born in Watsonville Hospital in 1949.

Rabkin: Tell me a little bit about your childhood.

Rider: I grew up on an apple orchard in Watsonville, went to local schools.

Rabkin: Watsonville High?

UC Davis and Cornell University

Rider: Watsonville High. Went to [UC] Davis, spent a year at Cornell [University], graduated from Davis in 1971.

Rabkin: So you transferred from Davis to Cornell as an undergraduate for a while. What made you decide to do that?

Rider: Davis, particularly at that time, didn't have anyone who knew anything about apples. It simply wasn't one of the major crops. They planted more acres of almonds than there were apples in the state every year, whereas Cornell had a very apple-oriented pomology program. It was *the* major crop in that state.

Rabkin: Did you go off to college thinking that what you wanted to do was get trained to work the land?

Rider: Not necessarily. I really didn't become an ag major until somewhere further along the line.

Rabkin: What made you decide to go that direction?

Rider: Good question. I don't know. I always liked growing things. Never really liked the business aspects of running a farm, but I like the plants. If I could just work with the plants and not have to deal with the paperwork or the people it would be a great job. (laughs)

Rabkin: (laughs) What proportion of your work time is working directly with the plants these days?

Rider: My brother and I are partners in our business. My brother runs the packing and the shipping, and runs the office. I concentrate on the growing end of things, although until a year ago, I was also running the cut flower business. One of the reasons I quit that was because it had grown to the point where I really didn't get out in the field anymore.

Rabkin: Let's go back a little to your early days. How much of the training that you got came from your dad?

Rider: Well, most of it. I'm not sure I really learned anything in college that was particularly useful.

Rabkin: Even in pomology at Cornell?

Rider: (laughs) Well, the way we farm here is substantially different than what people do in other apple-growing areas. Probably more of what I did there was

influenced by later trips to visit orchards in Washington, or seeing orchards in Michigan and New York. But I learned a lot from talking to other growers, too.

Apple Growing and the Rider Family Ranch

Rabkin: Once upon a time there were a lot of apple growers in this area. Is that true?

Rider: Yes. There still are quite a few. It's not like nobody grows apples. But years ago there were lots of people growing the same varieties for the fresh market. We were all doing similar things. Today most everyone in this area grows juice apples for Martinelli.[1] So what they're doing is quite different than what I'm doing, growing apples for the fresh market.

Rabkin: And is yours the only significant market apple operation in the Pajaro Valley now?

Rider: Other than on farmers'-market scale, I think there're only two of us who really pack and ship anything out of the valley anymore. The other grower is Gene Silva.

Rabkin: Why has that changed? Why are there fewer market apple growers here now?

Rider: Well, a number of reasons [involving] the changing structure of the business. One of the reasons that we went into organics was as a strategy to keep our packing operation viable. The structure of the industry changed from where it was economically viable to run a relatively small packing operation. There

were dozens of them, literally, in the Watsonville area. People shipped directly to wholesalers, and it was prior to when so much of it was directly shipped. Now, at least on the conventional side, everything is for the most part directly shipped to relatively large supermarket chains. A relatively small part of the business would be selling fruit to small wholesalers. Whereas at the time, every major city had dozens of wholesale produce brokers who would buy from individual growers. As the industry changed, there was a lot of consolidation in the shipping and packing and sales. So now you see in Washington, growers who are packing millions of boxes. Even packers with a million or more boxes don't consider themselves large enough to do their own sales, and are doing joint sales with other companies. So the scale of the sales end of it changed rather dramatically. Even if all the apples in Watsonville were destined for the fresh market, and they all went through one packer, it wouldn't be a very big entity in the grand scheme of things.

Rabkin: So in the conventional apple market it was no longer viable to be a small operation.

Rider: I would say that's true, yes. Certainly much more difficult.

Rabkin: When did you take over the apple growing business from your father?

Rider: Well, that would be somewhat gradual. I started in 1971, and I don't know exactly when my father was completely retired. He still came back and drove the truck and stuff in the season for a few years. He was probably still actively involved for maybe ten years. For the first couple of years he ran the packing shed while I did the field. My brother came back a couple of years later.

The Impact of Alar

Rabkin: So you were in the apple business during the big Alar scare in the late 1980s, is that right?[2]

Rider: 1989, yes.

Rabkin: What was that like for you? Did that have an impact on your experience?

Rider: It certainly had an impact on our perceptions of the industry. It didn't really have much impact on our business. We were, at the time, really transitioning away from Red Delicious. Originally, our business in the early seventies was built on Newtown Pippins for the fresh market, and the Red Delicious as an early-season item ahead of Washington. As Washington increased their production and their storage capacity to the point where they sold Red Delicious on a year-round basis, suddenly instead of getting a premium price for having these new-crop apples, we were looking at Washington realizing with four weeks left to go they had six weeks of apples. The buyers had suppliers who could supply all of their apple needs on a year-round basis, so coming to us for a short period of time really had no attraction to them. So the viability of Red Delicious as a fresh market apple—I couldn't tell you the exact years, but it disappeared quite rapidly. We had also been transitioning to Granny Smith as a green apple because it was larger and more attractive—

Rabkin: Than the Newtown Pippin?

Rider: Than the Newtown Pippin, yes. So the packouts were much better. We weren't doing a lot of Red Delicious, and if anything it might have been an advantage, because no one here treated Red Delicious with Alar, because we were aiming ours for an early market, and Alar was a maturity retarder. So it's not something that was ever used, to any extent, in California. But at the time of the publicity there weren't really a lot of California apples left in the market so it really didn't have a major impact.

Apple Varieties

Rabkin: What varieties do you grow now?

Rider: Now we grow a range of varieties, starting with Pink Pearl, McIntosh, Honeycrisp, Jonagolds, Braeburns, Fujis, Pink Ladies. We have a few Cameos, a few Granny Smiths left. We have some other odds and ends. But those are the major varieties. We try and have a range of varieties that ripen over a long period of time, to make best, efficient use of our labor force.

Rabkin: So were you ticking them off more or less in the order in which they mature?

Rider: Yes, those are in chronological order. But still, in addition to being organic, our niche really is to have varieties at a time when higher volume, lower cost of Washington does not have them. We try to avoid as much as possible competing on a head-to-head basis with Washington, because their volume, their infrastructure is so much greater, and their cost structures are lower than farming here.

Land Costs

Rabkin: Is that because of economies of scale, or because costs are different in that region?

Rider: Both. The big difference is that land costs are a fraction of what they are here. I mean, you can *buy* land there for what you rent it for here. That's not quite true. Well, it has been true at some points. It just depends on where you are. You can buy good raw land for somewhere [between] three and ten thousand an acre. Ten thousand would be extremely expensive for that area, whereas here there just really isn't much available. I think fifty thousand an acre would be the starting point and small parcels are more like 100,000 dollars an acre. That's a big disadvantage and it makes it very difficult for us to expand, or to be able to keep planting the new varieties as they come out, because there just isn't additional acreage available.

Rabkin: You mentioned twenty-five acres that your father bought. Are you still farming those twenty-five acres?

Rider: Yes, we are. He later bought another ten from his uncle on his mother's side. That was in the same in the neighborhood, but not adjoining. And then we also farm another thirty acres that's in Corralitos, that we bought in 1978, but that now belongs to my brother.

Rabkin: So how many acres total do you have in apples now?

Rider: It's about seventy-five.

Rabkin: And how many apples do you produce from that in an average year, if there is such a thing?

Rider: Oh, I assure you, there is no such a thing. (laughs) Oh, 75,000 boxes, something like that, packed boxes.

Rabkin: Do you have favorite varieties to work with?

Rider: Oh, sure. Some of them are much easier to grow than others. I like the ones that are easy to grow. My brother likes the ones that are easy to sell.

Rabkin: (laughs)

Rider: I think Jonagolds are my favorite in terms of eating right off the tree. And it's a favorite to grow, because it's fairly productive and it produces the sizes that we want with relatively little hand labor for thinning. It's probably our least expensive variety to grow for a packed box in the desirable size range. We try and grow a range of things and hit little windows. We don't want too much of any one variety and choke the market for that short period of time that we are in it.

Comparisons with Washington State Apple Growers

Rabkin: What are the advantages and disadvantages regionally of growing apples in the Pajaro Valley?

Rider: As opposed to competing areas like Washington, for example?

Rabkin: Yes.

Rider: Well, the big advantage that Washington has is they have a lot of land available at relatively moderate costs. In most areas they also have good availability of water at quite reasonable cost from federally supported projects. Plus, they have the infrastructure. They have the research, the suppliers, the tractor dealers, the cold storage, the packers, the sales agencies—the total package to deliver the range of sizes and varieties that the major, the larger markets are looking for. Which is why it would be, we felt, very difficult for us to compete in that market. Whereas, the organic has in the past been a much smaller-scale operation. We tend to, rather than sell multiple truckloads, we're selling a couple of palates at a time. We have an advantage early in terms of having trucks available, because early in the season, Salinas and Watsonville are the shipping center for organic vegetables and berries. So early on, there are a lot of trucks picking up mixed loads that are relatively close by, and can come and pick up. Later in the season, those deals are winding up, and all the trucks are going to Washington to pick up loads. So we have been for a number of years gradually phasing out late varieties, particularly Granny Smith, because, for one thing, we don't have much of a window. We pick them at the same time Washington does. And we tend to have sold our earlier varieties. If we're sitting here in Watsonville just trying to sell Granny Smith, it's a very difficult sale. We're mostly dependent on local buyers at that point.

Rabkin: In terms of climate and humidity, do you have advantages here over Washington growers?

Rider: Well, one of the major reasons that we got into organics in the first place was that we did feel that we had advantages in growing organic fruit over anywhere east of the Mississippi, in particular. Warm summer rainfall creates a host of fungus disease problems. And they have a wider range of insect pests than we do, too. But in terms of "versus Washington": in terms of where the best places to grow organic apples are, they are probably Washington and Chile—Chile because it has roughly the same climate but lower labor costs, and Washington, because even though we have the dry summers, which is an advantage, they're not as dry as Washington's. And most of the growing areas in Washington aren't as impacted by abandoned orchards or residential areas. They tend to have large areas of orchard that are relatively isolated from other areas. A big pocket of orchard surrounded by desert is an advantage in terms of controlling something like codling moth, which is one of the key pests. They can use pheromone mating disruption very effectively, more effectively than we can, although we can have fewer generations of codling moth, because it is temperature-dependent and we are the coolest growing area. So sometimes our codling moth pressure may be less. We may have one less generation per year than they do. So that could be an advantage. We definitely have more difficulty controlling the fungus diseases.

Transitioning to Organic

Rabkin: When did you decide to go organic?

Rider: Well, actually that really dates to 1989. That Alar scare made a very pronounced impression on apple growers everywhere—a much bigger

impression, as it turned out, than it did on the general public, it seems. At the time there was only a one-year transition period, rather than a three-year, so it was relatively easy to— I say relatively easy, but it was very much a stretch because virtually no one was doing it, and no one really had any idea whether it would work or not at the time.

Rabkin: No one in the West? No one in California?

Rider: Well, there were people dabbling in it. But what we saw, was for a very short time an extremely limited number of organic apples that were available in the country brought relatively high, phenomenally high prices, perhaps. Although, again, if there were only ten boxes available, why, what did it really mean? And as a consequence, people all over the Western states converted fruit to organic, and you saw a big spike in organic production which wasn't really followed by a spike in organic consumption.

If you look at the history of organic [apple] production in the Western states, it takes this big spike in 1990-91 and then it drops right back down again as most of those people who got into it with Red Delicious found that there wasn't that big a market. There were more acres converted than there really was a market for, and people didn't get enough of a premium to justify their extra costs. On the other hand, *we* stayed in it, partly because our extra costs hadn't been that great, our alternatives were not good. Again, it was marketing. Even if there hadn't been much of a premium, suddenly we had people interested in our fruit, whereas before they weren't at all. It kept our packing operation running, so even though we weren't convinced we were getting as much of a premium as we

needed to really make it work, we didn't really see very good alternatives, so we continued with it.

But in terms of trying the organic, we had seen that there were a number of other growers trying organic on a small scale, most of them not terribly successfully. But we were very impressed with the fact that they sold some really ugly apples at some pretty high prices. Most of the people who were involved didn't really know what they were doing. They didn't have a background in agriculture or apple growing. So it seemed to us that it was something that we could do better than the people who were at the time trying to do it. We were already using sulfurs, which were organically legal for most of our fungus disease control. And we had been playing around with some different strategies for insect control. We had done some tests on different rates of different materials with our skin worm type worms, our Orange tortrix [*Argyrotaenia citrana*]. And we were seeing that we didn't really get a lot of difference in damage regardless of what we did. Higher rates of some of the pesticides tend to actually increase the damage with that.

Rabkin: Is that because they generate resistant populations?

Rider: We were in a historical situation. Our primary worm pest in the seventies was these surface-feeding skin worms. We had virtually eradicated codling moth on the valley floor. Everyone was growing for the fresh market. Everyone was interested in having clean fruit and, if anything, people were excessively concerned about it. No one wanted to have wormy fruit. Actually, I never saw codling moth in an orchard on the valley floor for quite a number of years after I

started farming. I mean, it was just our programs. We were using an insecticide for chemical thinning—Seven—and it was quite effective, usually, in hitting that first generation of codling moth. On some blocks we had tried just eliminating our insecticide program to see what happened, and it really didn't cause us much problems. We ended up with about the same level of skin worm problems and we didn't see any codling moth.

But that changed quite rapidly as people starting growing for juice. It changed. Instead of the emphasis being on quality, the emphasis was on growing as cheaply as possible. Even though Martinelli, at many times, paid several times as much for juice apples as competitors were paying in other states, sometimes many times as much, it still wasn't a high enough return to be able to spend very much money farming. You had to farm cheaply to make it work. So as the base population of codling moths returned to the valley, and there were abandoned orchards that supported it, it wasn't very long before codling moth became a big pest again.

But when we started, our first blocks were done on Riverside Drive here, where we were growing Grannys. Granny is somewhat less susceptible, I think, to codling moth damage than other varieties. This is a very cool area along the river. The codling moth flies and mates at sixty-two degrees at sunset, supposedly, so it needs fairly warm evenings to reproduce. We're in the wind tunnel here along the river, so we get relatively few days where you have those warm evenings, whereas, if you get up in the Aptos hills, or Pleasant Valley, or away from the main Pajaro Valley floor, it stays much warmer in the evenings, so

you have a more favorable environment. Plus, there weren't a lot of other orchards out here, and we were starting from a clean situation where we didn't have any worms to start with.

So we were able to get by for a number of years with very little in terms of worm control, and still not seeing very much of a problem. On some blocks, we used Bt, a biological insecticide. It required a lot of sprays. But it did work. And it probably, at the time, would have been more effective here than in Washington. So at the time I think we felt that we maybe did have one of the better climates to grow. Maybe we had a little bit of a disadvantage in terms of disease control, but a little bit of an advantage in terms of worm control, over Washington. But within a couple of years, the pheromone mating confusion technique started to be talked about, and we had some of the first test plots on some of our ranches.

Organic Controls for Pests and Diseases

Rabkin: Were you working with Sean Swezey[3] on those?

Rider: Yes. We just happened to meet Sean. He was looking for some places to do some trials, and we were looking for somebody to do some trials (laughs) actually. That was a fortuitous meeting for both of us. We were able to really be the first ones to take advantage of that technology.

Rabkin: How did you happen to meet Sean?

Rider: I remember meeting him at something with the Corralitos Padres. I don't know whether it was something to do with the kids and sports, or whether it was a pancake breakfast or something.

Rabkin: Have you continued to use that pheromone-based control for codling moths?

Rider: Yes. And everyone who farms organic apples does as well. Unfortunately it has turned out to be much more effective in Washington than it is here, because they tend to have larger, more uniform blocks, and they don't have all the untreated backyard trees or surrounding orchards that we have here. [They frequently have] a more uniform topography. They have been able to do area-wide management programs where people do huge acreages on a cooperative basis. That really is a big advantage with that technique.

Rabkin: As an organic grower, do you have alternative control methods for codling moth?

Rider: Not ones that we would like to have to use. The codling moth virus just got registered again in California after having been off the market here for, gee, fifteen years. But it's very expensive and not terribly effective. If we had to, I think we could control codling moth with that. And we also have Entrust registered, too. Or Spinosad. It's the generic name for the trade-named product Entrust. It's a legal material organically, but I think it would create most of the problems that spraying with any other synthetic insecticide would. It's more of a broad spectrum and it will kill aphid predators. I'm reluctant to use it. But it's nice to know that we have options. We're quite concerned about what we may

have to deal with, with light brown apple moth, for example. And then we have other worms that— You know, it's a changing situation. We've had new worms come and worms go. We've had problems with *Pandemis* at some times and then had it disappear. We've had problems with eye-spotted bud moth causing major problems. We did some treatments with Entrust on that. We were able to get just about as good results with Bt, at a much lower cost, and with less threat of disrupting the predators of our aphid.

Rabkin: Do you have other pest or disease or fungus problems that you have to deal with, besides what you've mentioned?

Rider: Well, the big diseases are apple scab and mildew, which we can control with lime sulfur and micronized sulfurs. It's somewhat riskier not having a range of other materials to use. So we always have to spray like we're scared. It's very important for us to treat early and often, because we really don't have any materials that can correct a bad situation if we allow it to develop.

In the last ten years we've had much better disease control than most of the conventional growers, because we have been more concerned about it than they have, and we have been much more careful to apply our materials in a timely fashion. We're set up to watch the weather and cover the ranch rapidly when we need to. Some year we probably will get in trouble, but so far we've had reasonably good luck with those.

We do have a problem with the brown garden snail, which has been very difficult to control in the past. Now we have a legal snail bait, Sluggo, which we hope will help us there. Some varieties are very susceptible to damage from

snails. We spent a lot of years picking snails off of trees by hand, which is an expensive and not very pleasant job. (laughs)

Rabkin: It sounds very labor intensive. (laughs)

Rider: Ah, yes. We have problems with rodents, gophers and mice eating tree trunks.

Rabkin: What do you do about them?

Rider: We really don't have any good control for mice. Gophers—we use traps. In the past we have used a rodent torch. We put propane and oxygen down the holes and ignited it. But that has, just in the last year been deemed no longer meeting the organic standards, after previously being acceptable. We're hoping that it will again be allowed, but at the present time it doesn't look real promising. So that's not allowed.

It's very difficult when you only have one control method. Any spray or pest control method works better if you can rotate it with other techniques with a little bit different mode of action. If the gophers haven't seen traps in a couple of years, you go in and they're very effective. The traps catch a lot of gophers. But still, you make your first pass, you catch half the gophers; you make the second pass—you catch half of what's left. You make the third pass, you hardly catch any. Either those gophers have learned about the traps, or those gophers had techniques that just didn't lend themselves to being caught in traps. Then, if you can rotate to another method, then that will be fairly effective for a while. But whether they had deeper holes, or more open holes, or who knows what, there

were gophers who didn't get killed effectively with the rodent torch either. But by rotating the two it certainly made it easier to keep some level of control.

We are concerned that with the fungus diseases we really don't have a range of options. Sulfur is really it. It's fortunately a material that most things haven't developed a resistance to, but there are some insects— Scale developed a resistance to lime sulfur, so it's not totally out of the question that we could have lime-sulfur-resistant scab at some point in the future.

Rabkin: With the small insect pests, have you been doing any biological controls— hedgerows, or anything of that nature?

Rider: We do have some hedgerows.

In terms of other insect pests, again the one pest that does turn out to seemingly always be an induced pest is mites. We felt that we could use some of the sulfurs to suppress mite populations, and without insecticides we probably weren't going to have mite problems. But we really were surprised that we never saw mites again, really, after we went organic. We rarely had mite problems as conventional growers, unless we introduced a new insecticide or something into the program. There are mite predators out there. You don't see them. The populations are low. But it's just amazing. We tried synthetic pyrethroids, but the mite populations blew up to enormous populations that were really difficult to control.

Rabkin: So you knew that you were getting rid of the predators.

Rider: Or something. There are actually some theories that maybe these materials irritate without killing the mites, and that it may cause them to disperse more. There might actually be a physical reaction that increases their population in addition to eliminating predators. But I don't know that anyone has really resolved that.

We have a problem with rosy apple aphid. That's an aphid that causes the leaves to curl. And once the leaves curl, then the aphids are very difficult to reach with sprays or predators. We have no sprays that really are effective on that. Again, we rarely saw aphid problems before we were organic. And other than occasionally woolly aphids—we probably see less of them than we did but we still have them, and they tend to come and go in cycles. There is predation, but because they have that woolly covering they are somewhat more resistant to predation than some of the other aphids. We can see green aphids, or some of the other aphid types on new shoots on young trees, particularly, or trees that are more vigorous. But predators almost always take care of those fairly rapidly.

Rabkin: Do you bring in predators or just the natural populations?

Rider: No, just the natural populations. And the rosy aphids are farmed by ants, and the predation will take care of them. We don't ever really ever see a problem unless we have ants. So it's more a question of trying to deal with the ants. That's again a problem that's, generally speaking, adjacent to residential areas. The ants tend to over-winter in houses, or structures, or something. Where we get away from houses, we rarely run into problems with ants, and then we again rarely run into problems with aphids. Those have not been huge problems. They are

concerns, though, because we really don't understand all the factors as to why we see them sometimes and why we don't see them other times. It seems like we had a period there of three or four years when woolly aphids got worse each year. We tried some different things, spraying them with soaps and so forth, with a hand gun. But it wasn't very effective. I think even the soaps kill the predators as effectively as they do the aphids. So it knocks the population down, but it seems like it rebounds quite rapidly. So we really don't have a solution to that one.

Rabkin: So it sounds like you are perpetually braced for a potential pest problem.

Rider: There's always something new. We've seen this cycling or turnover of, particularly, leaf roller type insects. We had a period where *Pandemis* was the major problem. Then *Pandemis* disappeared and we had a problem where it was the skin worm, the Orange tortrix, and then *Pandemis* again. And then eye-spotted bud moth showed up. It's one that's been around. It's been caught historically. It seems to be quite susceptible to most insecticides, so it may be one that was totally suppressed when people were using insecticides. And then without it, it's one that comes back. The *Pandemis* and the eye-spotted bud moth are both introduced pests, so that they don't have as effective a predator population as the Orange tortrix, which is a native pest. It's present in all stages of its life cycle all year round, but it has a local predator population that goes with it. That was probably our biggest surprise in terms of going organic, is that the Orange tortrix didn't turn out to be as big a problem as we thought it would

be. We never get rid of them completely, but our damage is really not significantly different than what we were dealing with when we sprayed for them.

Light Brown Apple Moth

Rabkin: Talk to me about light brown apple moth. Are you worried about it, and what do you think about the spraying situation?[4]

Rider: Well, we're quite concerned for a number of reasons. One of them is that we want to be able to sell our apples. If they become established here and only here, why, then we would lose our national market that we depend on. Each of these varieties we grow for this little window. We have the only organic McIntosh or the only McIntosh in the country for this window. We have the only organic Honeycrisp for this two or three-week period, and the only organic Jonagold for this period. It doesn't make sense for us to store those and sell them locally over a long period of time in competition with other, lower-priced products. Our marketing strategy is to move those out rapidly all over the country, particularly something like McIntosh.

Rabkin: When they're fresh and when you have the corner on the market.

Rider: We ship them to the East Coast, to McIntosh country. We want to have those all sold before the local crop comes in wherever they're going to. Our whole product mix really isn't based on trying to sell locally. Plus, there are too many apples here for all of us to sell the stuff locally. So we're quite concerned about getting into a quarantine situation where we couldn't ship the stuff. If we

had to put it in cold storage for a month to kill the worms, or something like that, that would really be devastating to our operation.

We are concerned about what light brown apple moth will do to apples. We don't really know. We know that in Australia it can be a fairly serious pest, and they have trouble controlling it with insecticides. I have talked to people who suspect that it may be one that conventional growers are having more trouble with than the organic growers in Australia—similar to our Orange tortrix situation, where there probably are predators inasmuch as it's native there.

The problem here is when you deal with introduced pests, usually we introduce the pest but not the predator population that goes along with it. So it's quite possible that light brown apple moth could be a far more serious pest here than it is in Australia where it came from. We just don't know. And again, we have a limited range of effective insecticides that we could use. Both the *Pandemis* and the eye-spotted bud moth are more temperate-zone, or colder-winter pests. So they tend to emerge at one time and have a couple of generations per year, which allows you to target your sprays to those peak flights. So if we need to use an insecticide like Entrust or the Bts, we can put on several sprays in succession when we know they're out there, or we know they're hatching, but still keep it down to three sprays with each generation.

Light brown apple moth is more like our Tortrix. It's out there: adults, juveniles, eggs hatch all season long. So to try and have season-long control with Bt's, which has a three- or four-day effective time period, would be a very difficult challenge. Even with codling moth we were looking at— That was some of our

first experiments with seeing whether (before pheromones were out) whether we could control codling moths with Bt. And we felt we could as long as long as the pressure wasn't too high and we were starting out from a low population. But we were looking at probably fifteen sprays, and that's a pest that's has discrete generations that we could target. The problem is here your first one has a very discrete peak, but your second one has a lower peak over a longer period. By the time you get into a third generation, you just have to treat all the time. But something that could start from bloom through harvest—that would be very difficult. We don't know, really, how we would approach that one.

Rabkin: What are your thoughts about the aerial spraying to date that's been localized, and the potential plans for future aerial spraying?

Rider: Well, I would certainly like to see it eradicated. I'm not convinced that aerial spraying of pheromones is going to eradicate it. I've been a little disappointed that it's become such a controversial subject, although I can somewhat understand how people feel about it. But pheromones are really the gold standard of organic pest control. Here is something that's non-toxic, doesn't even kill the worms, targets a specific worm and no others. It's the best pest control system we could really hope for, and still, it's not acceptable to so many people. The biggest problem is I'm not convinced that that alone will work. We put pheromones. We put twist ties in the orchard and we don't get a hundred percent control. I wish they had sprayed earlier, and I think as a public relations thing they used the early pheromone in outlying areas where there really weren't any light brown apple moths to speak of, which allowed them to say, "Well,

we've eradicated them from these areas." I think it would have made much more sense to have used those materials in the Santa Cruz area where there were high breeding populations, and try and get the population down.

I don't know. I'm a little bit pessimistic about the prospects of eradication, because it does appear that it's fairly established and has been for some time. If it's really reproducing in oak woodland and so forth, I don't know. I don't know how we're going to keep it out of the apple orchards. It's a very scary situation. Again, it's one that if we could eradicate that from California— Even if it required a fairly substantial use of pesticides somewhere, it would probably reduce the total amount of pesticides that are going to be put into the environment dramatically over allowing it to become established and then having people treat for it all over the state. I mean, what disruption is it going to create if California has this pest and we can't ship our apples out of state, or we can't ship our strawberries out of state, when we grow virtually all of the nation's strawberries? There are some major issues to be resolved.

Weed Control

Rabkin: Are there any aspects of farming organically that have been challenges for you that we haven't talked about yet?

Rider: Well, weed control certainly is an issue. We tried a lot of different methods for weed control. Eventually we just really gave up. We just let the weeds grow, other than on young trees. Where we have large trees that are growing well, we've realized that we can ignore the weeds, and actually the less

we do the better off we are, because if we disturb the ground then we are seeding annual weeds, which tend to be tall and disruptive and more competitive. Whereas, if we don't disturb the ground, then, over a period of time succession leads you to perennial grasses, which tend to be relatively low-growing. They survive. They grow in the wintertime when the trees are dormant. And then when the trees leaf out, and it shades it out, those grasses don't grow terribly vigorously. They get shaded out and they don't cause huge problems. It does make it very difficult for us to maintain micro-sprinkler systems, so we've had to move away from some of the permanent irrigation systems because of difficulties maintaining them without weed control. Lack of effective weed control does make it more difficult to control snails and mice. Those are the sorts of things that follow. So those have all been challenges.

Rabkin: What kinds of weed control methods do you use around the young trees, where you have to keep the weeds down?

Rider: We disc close to the tree and then hoe the rest of them, and then use a drip irrigation for the first couple of years so we confine the weeded area to a relatively small area, and then we pick up the hoes and hoe it.

Probably our biggest challenge here is how to replant orchards. We have no effective organic replant disease treatment. In the past, all of our ground has been treated with methyl bromide before replanting. We have tried replants without using fumigation, but they're just simply not successful. The trees don't grow well enough to fill the space rapidly enough, or grow well enough to be economically successful. In the past, we simply took blocks out of organic

program, fumigated them, and then put them back in three years later, which is somewhat frowned upon now.

Rabkin: Frowned upon by—

Rider: Well, by CCOF, our certification agency. They don't consider it to be in the spirit of the law. Which it's not. And it's prohibited by some of the foreign certifiers, so if we did that it might jeopardize our ability to export products. If I had unlimited funds, I'd just simply go buy the vegetable farm next door and plant trees on that, and lease them some of the apple ground, or something like that. Rotation is a solution, but it takes very, very—I just looked at an orchard here a few days ago that was out of apples for five years, and then replanted. And you can see where the trees were, and where they weren't. The trees that were planted in an area that didn't have apples are probably twice as big as the ones where there were apples. And that was with five years of cover crops. So the rotation would have to be a very long-term situation. We are farming relatively small acreages. We're just simply not in a position to take out twenty-five acres at one time. So if we do three or four or five acres, how do you lease that five acres in the middle of your ranch to somebody else for ten years?

So I don't know. That's a remaining major unsolved, long-term sustainability issue. For us to really be able to grow these organic apples on a long-term basis, we have to figure out how we're going to replant the orchards. So far, we don't have good answers to that. We are working with some new rootstocks that are supposed to be less susceptible to replant problems, but we have not really seen a major difference in those. The problem with this specific apple replant disease

is that it seems to be a different complex of— We don't even know whether it's fungi, nematodes, or bacteria, or something else. We have a pretty good idea it's biological though, now—even though for a long time it was suspected that it wasn't—because methyl bromide so effectively corrects the problem, that suggests—

Rabkin: So you get a general failure-to-thrive situation without a clear source—

Rider: Yes, without a specific disease. In other words, we do have specific diseases that kill trees. If we have a site with *Armillaria*, oak root fungus or *Dematophora* (*Rosellinia necatrix*)— There are certain other very serious diseases. Again, those are things that there are no other controls [for], other than methyl bromide fumigation. But those things tend to kill the tree. Whereas, the specific apple replant disease, which maybe is more like a syndrome than a disease, is you plant an apple tree where apple trees have grown, and it grows only a quarter as much as if you'd planted it where an apple trees haven't been planted. But if you plant a peach tree in that ground, it grows fine. It doesn't suffer any repercussions. So it's specific to that apple crop that was there. And maybe a peach would grow a little bit less, because peaches and apples are all members of the rose family, so there might be some bleed-through there. But the more different the genus or the species is that you're planting, the less likely you are to see any difference. So that's a difficult one. Right now we tend to try and maintain our orchards and graft them to other varieties as we want to change our variety mix.

Certification

Rabkin: What's been your experience with the whole certification process?

Rider: Oh, you know. We're farmers. We don't like to do paperwork. (laughs) So we consider it to be a pain. But, again, we realize that it's necessary. I mean, it's one of these things where you don't want to go through it yourself, but you wish they would be harder on some of your competitors. (laughs)

I don't really know how you get around it. Again, it is one of my pet peeves. I just hate spending time doing paperwork. A lot of what it is is writing an organic system plan, and putting down on paper what your logic is and what you're doing. I suppose, to this point, because we have over the years earned a sufficient premium for the organic fruit to justify our trouble, that we're probably not going to complain too loudly. But as the premiums for organic decline, which I think we're going to see a lot of that here soon in the apple industry, then it will be somewhat more painful to know that maybe we're not getting enough additional dollars to pay for that. We're spending several thousand dollars for certification fees, plus our time. So it's significant. But again, at this point it's been worthwhile.

The Walmart Effect

We've been fortunate here the last—well, I don't know how many years. I was saying earlier that in 1989 we had this big spike in organic production. Then it dropped off. And then we had a long period where demand grew faster than supply. So many people had tried it and had bad experience with it, particularly in Washington, that there was a perception that there was not a good, viable

option. Then there was the switch to the three-year transition period, which made even a bigger hurdle. So we had quite a number of years there, in succession, where our increased income more than offset our increased costs. Unlike some of the competing commodities. We've seen the vegetable producers were able to overproduce far more rapidly than apples. You saw more ups and downs. Production would go up, prices would come down to the conventional price. And then people would get out and then it would go back up again. In apples we've been— Well, permanent crops tend to have long cycles, whereas annual crops tend to have rapid ups and downs. In the berries, I think there were a number of years where there were premiums. As a lot of vegetable growers transitioned, a lot of acreage that became available. It was easy for a berry grower to find already organic acreage, plant berries and overproduce them almost immediately. So we've seen some of those. And the berry crop prices come down dramatically.

And now we're looking at—I call it the Walmart effect. Three years ago Walmart said that they were interested in carrying more organic product. And in general the conventional supermarkets showed more interest in starting organic departments. So as a consequence it became difficult to ignore. So what happened is all your large packers in Washington, in particular, felt that they needed to have an organic division, that their customers were going to be buying organic, and if they weren't supplying it somebody else was going to supply it, and that was going to hurt their conventional deal as well, if they didn't— I mean, that's what the change in marketing has been over the last thirty or forty years, is that each marketer is trying to supply all the products on a year-round

basis that their customers want. So we saw a huge acreage go into transition in Washington. And by that time there had been enough experience of people growing some up there for them to know that it could be done and know, really, how to do it. So we are looking at a somewhere around forty percent increase in total acreage from 2007 to 2008, and from 2007 to 2008 they were talking about a doubling of the total acreage in Washington, based on estimates of what's in transition.

Rabkin: Of organic acreage.

Rider: Of organic acreage, yes. And in terms of apples, Washington really—California has some, California has a fair amount of acreage, but in terms of fresh market packed boxes, there isn't a lot. So when you say Washington's going to have a forty percent increase, that's pretty close to saying that the whole industry is going to have a forty percent increase in product.[5] And the market is simply not growing at that rate. So we're somewhat apprehensive about what the next couple of years will bring, whether there will be a couple of bad years and then people will get back out again, or what? All this is based on the assumption that the conventional supermarket chains are going to be successful selling organic products.

Rabkin: Is the jury not in on that yet?

Rider: Well, I'm certainly not convinced. They are stocking them, but when I go into stores I don't see that they're selling it, even in Santa Cruz. Of course maybe in Santa Cruz it's more difficult because there are stores which sell organic product. So maybe it will be more successful there. But when I go in and look at

the organic departments in the conventional supermarkets, they simply do not have the turnover to maintain quality. And really, quality of produce has more to do with how long it's been on that shelf than any other factor, [like] variety. Regardless of what the quality was when it left the shipper, if it sits out at room temperature for two weeks before people buy it, it just isn't going to be any good. That's what's happening. I go in and I look at the stuff, and I buy a few apples. You're paying a premium price and getting something that's not as good as the conventional product because it didn't turn over as rapidly. It sat there too long. So often the displays are not refrigerated. It's particularly upsetting when it's some of my own fruit. I go into a store and I see my fruit out on the shelf, and I know that it's been two months since we sold it to them, and it just should not be there any more! So I *am* concerned. What happened back there in 1989 was that the conventional markets did stock organic in what people referred to as the organic ghetto, off in some little corner. Now it seems to be that they're getting a little bit better real estate than they used to, but that's what happened then. They were stocked but they did not sell. They did not sell through enough product in those individual stores to be sell people quality product at a reasonable price.

Rabkin: Do you think that if and when Walmart does start to do a big business in organic, that simply the increased exposure around the country will change people's buying habits?

Rider: Who knows? (laughs) I don't know. It's interesting. Maybe. Walmart actually is selling quite a few organic apples. They tend to sell the mainstream varieties, Reds and Goldens, which have not been particularly popular in the

organic exclusive markets [that] tend to market to a little bit different income segment, as well as a philosophical segment of the population. If you go into a Whole Foods you're not usually going to see Reds and Golden Delicious prominently displayed, because those are ordinary apples, and they are not in the business of selling ordinary apples. They are in the business of selling specialty items. And there's a supply end of it, too. A lot of Red Delicious growers were doing very poorly and were desperate for any alternative, so I think you saw more Red Delicious converted to organic than really there was a market for. So for a number of years we've seen organic Red Delicious prices really not at a high enough price to justify the extra cost. But it did allow somebody like Walmart to sell a lot of organic Red Delicious at prices that were certainly substantially less than what Whole Foods was selling organic apples for.

Distribution and Marketing

Rabkin: Tell me about your marketing arrangement with CF Fresh/Viva Tierra.

Rider: Well, we use CF Fresh, based in Washington, to sell all of the apples we grow as well as ones we pack for other growers. Because we are selling into such a small timing window, it makes no sense for us to try and do our own sales and establish contact with buyers for a very short window. We'd have to be buying our way, or introducing ourselves into that market every year. Since we are trying to hit these little windows, it makes sense for us to be a supplier of someone who is marketing a range of organic products on a year-round basis, including from South America. They are a company that's in these markets,

that's selling to these customers with a range of products on a year-round basis. It's worked reasonably well for us over the years. I think some arrangement like that is the only thing that really makes sense for our current marketing plan.

Rabkin: How widely are your apples distributed?

Rider: They go all over the U.S. and into Canada, but California is still by far our largest market. We have shipped to Europe in the past, but I don't know that we've gone into Europe since we've taken out most of the Granny Smith. Europe is an excellent market for smaller-sized fruit. So at one time we sold a fair amount of smaller-sized Grannys to Europe.

Supersized Apples

Rabkin: They haven't supersized there yet?

Rider: You know, I don't know. I don't know why the American public feels that large apples (laughs)— I mean, we could grow smaller apples quite a bit cheaper, but the money is for eighties and eighty-eights. An eighty apple is a half-pound apple—forty pounds per box, eighty apples. So it's three and a quarter inches in diameter, something like that. It's a very large apple.

And that is also one of our disadvantages in this area, is fruit size is not one of our particular strengths here. Because we have a cooler growing season we tend to have more trouble, I think, than some other areas in getting larger fruit sizes, particularly with some varieties. The Galas. We don't grow Galas because the

profitable sizes are larger than what we can grow here. It's a small apple, and if you grow small Galas you simply don't make any money.

Rabkin: I have to say I've never understood that, because I can't eat a big apple. But I guess most people want them.

Rider: Most people perceive them as being more valuable. Some people say they prefer small apples but they expect to get them at lower prices. You go into England in supermarkets and they're selling the 113. The 113 in a thirty-pound box is probably the standard size, which is a nice-sized apple to eat. You simply don't see that many large apples. The only place I saw large apples last time I was in England was in the new Whole Foods in London.

Rabkin: (laughs) Interesting.

Rider: But yes, smaller fruit tends to be firmer, store better, bruise less, have less physiological or breakdown disorders, and just handle transport and room temperature storage a little better than larger fruit does.

Labor Issues

Rabkin: There are a couple of things about running the farm we haven't covered yet. Could you say a little bit about your labor situation? How many people do you employ, full time or seasonally? And do you have particular problems or challenges with labor?

Rider: We have certain advantages in attracting labor over other apple growers, or other commodities, in some respects, and as a consequence, we've had a very

stable workforce and relatively few labor problems in recent memory. We do virtually all of our labor hours with full-time people. We hire seasonal people to help with thinning. That actually requires more people over a shorter time than the harvesting. We hire a few extra people to help with harvesting, but probably at least seventy-five percent of our harvesting is done with our full-time crew, because we start picking in July and pick through November.

Rabkin: About how many full-time people do you have?

Rider: Somewhere between six and eight, depending on the circumstances. (laughs) Right now I have seven people working, and six of them have been with me for oh, probably at least twenty years. Some of them I hired my first year, so we're looking at thirty-something years. I've got one new guy. I've had a little bit of turnover. But all of our fruit is picked from the ground. All our trees are pruned from the ground. We don't use ladders. So that allows us to keep our workers for a lot longer. I probably have the oldest average workforce of anyone in the Pajaro Valley. I talk to berry growers whose average age of their workforce is in the early twenties. My guys (laughs), I'm starting to get a little bit worried. They're all a few years younger than me, but a lot of them are in their fifties now. But they're still able to be quite productive because they know our system, and the same person prunes that tree, thins that tree, picks that tree. And we do it all on an hourly basis. We're not doing any piece-rate harvesting. So our costs are a little higher, but it pays for itself in quality. Now, if we were growing for juice, we simply wouldn't be able to operate the way we are. We would probably have

to go back to bringing in a labor contractor and rushing through the pruning and then letting them go.

Rabkin: Because of the lower return on juice apples?

Rider: Right. We're not really trying to minimize our costs. We're trying to maximize our return. If you're growing for juice, there is no hope of maximizing your return, really. So minimizing your costs is the only way to make it.

So we do some operations a little earlier, and a little later, and so forth. After harvest, we'll start pruning the next day (we may have some cleanup to do), but we'll prune right through bloom time. Certain varieties that maybe are overly vigorous, we'll prune them at bloom time, which will reduce the vigor a little bit. We prune the weaker trees first. And then we'll maybe do a little blossom thinning, and then we'll go right into thinning, breaking off blossoms or something if the fruit is not big enough to thin on some of the varieties that appear to have a larger set, so that we can transition right into thinning. We'll thin through the summer. Then we'll do a little summer pruning, opening up the trees. And then just roll right into irrigation, and then into harvest again.

Rabkin: So you're mainly hiring seasonals during the thinning period.

Rider: We're hiring seasonal people usually late April, May, first of June to—Our biggest cost disadvantage versus conventional production is we don't have a chemical thinner. On the other hand, for our markets we would have to follow up with hand-thinning anyway. But still, it would reduce our costs substantially and help us to eliminate alternate bearing. The thing about chemical thinning is

you knock some of the fruit off very early in the life of those blossoms, which enables you to get a little bit more fruit size. Because the sooner you take the fruit off, the more energy you're transferring into the fruit that's going to remain. So chemical thinning is an advantage in terms of getting fruit size, but in getting fruit off the tree so that you don't end up with a large crop/small crop alternation. Apples are quite susceptible. If you leave too many apples on and don't get them thinned off early enough, then it will affect the blossom formation for the following year's crop.

If you look at some historical records like in Western New York before there were chemical thinners, they would have a frost and then they would have no crop one year, then followed by a huge crop of tiny little apples, and then no crop the next year. Then gradually it would even out a little bit. Then they'd have another frost. They'd get into these big cycles. When they introduced chemical thinners, it really evened out their production dramatically. With some varieties that's more important than others. Newtown Pippin is very susceptible to alternate bearing and it's very difficult to hand-thin, so it's one that would be a challenge that way.

Rabkin: How many people do you usually have to bring in?

Rider: It depends on the year, but we might bring in as many as ten additional people. But it might be substantially less too. Some varieties require quite a bit of thinning, some don't. Jonagolds is a naturally large apple that's triploid, so it has sterile pollen, doesn't pollinate itself. It tends not to overset badly, and then sizes well, in addition. We can thin that quite late. But Fujis and Braeburns tend to set

very heavily and have tight clusters. They need to be thinned very early, particularly if we want large fruit size on them.

Organic Apple Growing

Rabkin: Are there any aspects of your apple growing operation that you think set you apart from other organic ones?

Rider: Other organic ones? (laughs) Well, there really aren't any around here.

Rabkin: Okay, drop that part of the question. (laughs)

Rider: Well, actually over the years we have packed fruit for quite a few other organic growers. And we're still here and they're not. Really what sets us apart is we are actually professional growers and have a little bit more background and understanding of how to grow apples. A lot of people have gotten into it for philosophical reasons, throughout the state, and they've rarely been successful. Frequently, it's just because they lacked basic horticultural skills, or basic business skills. Again, it's not business reasons that got them into it. It was philosophical reasons, and they just did not have the business or the horticultural skills to make it work.

When we first started, we saw that there were a number of people dabbling in organics at the time. There were a lot of people who weren't really growers, who were dabbling in it. Renting an orchard up in the hills was a good cover for growing other agricultural crops that generated greater income. (laughs) But still,

we were impressed with the prices they were able to get for their fruit, even though they didn't do a very good job of farming it.

There was one grower, actually, who understood apple growing and did a fairly good job. That was George Ivancovich, who was using oil sprays to control codling moth. But he had to use an awful lot of oil to make it work. He was starting out with orchards that were in high codling moth pressure areas. So he really had some disadvantages in terms of making that work, and simply there weren't a lot of tools available at that time. And so he wasn't, I don't think, long-term very successful.

We thought that we had certain locations and certain varieties that would enable us to get started in it. Plus, we had the additional incentive of realizing that what we were doing wasn't going to work. I mean, 1989 was something of a watershed year for us. I was actually on the Larry King show before it was popular, defending apple growers in California, saying, "Hey, *we* didn't use Alar."

Rabkin: (laughs)

Rider: They wanted a California grower.

We decided to try some organic at the time. We didn't transition the whole ranch at once. We started with a few acres to see how it would work. There were years we had organic and transitional and conventional fruit. But we decided pretty quickly we had to either do it or not do it. Doing it halfway wasn't really a very effective system.

The Cut Flower Business

So that was the year we started the organics, and then that was the same year I started growing the cut flowers, too. The apple business as it existed at the time was not feeding my family, so we were clear we had to make some changes. We'd been making changes all along. We'd changed from Reds and Newtowns to Granny Smiths, and then we were planting other odd varieties, too, at the time. Just a continuation of looking for something that we thought we could do better than other people who were in the market at the time.

Rabkin: How many acres did you put into flowers?

Rider: At one time I had about eighty-some acres in cut flowers. So in terms of employees and dollar turnover it was actually a quite a bit bigger operation than the apples.

Rabkin: How were you marketing the flowers?

Rider: We had three full-time salespeople, and we were selling them all over the country. The flower business is a little like the produce business fifty years ago, in that there are wholesale florists in each major metropolitan area. So every day we would take orders from dozens of wholesalers and have three boxes going to wholesaler A in St. Louis, and ten boxes going to New York, and some going to Boston and Des Moines, and God knows where. It's still not a very efficient marketing system. A truck has to pick up a bunch of different small orders, and then they're consolidated in a truck. The truck goes across the country and stops twenty-seven times, dropping off boxes here and there. So it costs a lot, probably ten times more to send a box of flowers across the country than it does a box of apples, especially on a volume conventional deal. The truck backs up; it gets

loaded with apples for Wegman's in New Work. They shut the doors. The truck drives and unloads the truckload of apples. It's a fairly efficient system. Or strawberries. The organic still, somewhat, where the truck goes around and picks up two pallets of berries, and two pallets of vegetables, and two pallets of apples or something.

Rabkin: Were you growing the flowers conventionally?

Rider: Yes. Well, most of the time. We dabbled in organics but there never was a large enough demand or consistent enough demand for us to really be able to make it work, in our opinion, anyway. Today there might be. But it was a very different market than what we were selling into. At one point we had several acres that we had taken out of organic apples, and we put it into organic flowers. But there was no hope of selling all of our flowers organically. There simply wasn't a market for that. There wasn't very much of a premium, either. And the costs were substantial, because there's a range of pest control materials we simply didn't have, like snail bait. That didn't come onto the scene until a year ago.

Rabkin: Sluggo is that new?

Rider: Well, it's that new where it's been approved. It's been around for a few more years, but it's only in the last about a year that it's been approved for organic use. And there simply aren't very good Botrytis control materials in the organic.

There were things we could grow, but we were marketing to a high-end specialty market. You'd have an event planner who wanted to do organic flowers for this particular event. They would want to buy this huge amount of organic flowers on a week from Thursday. But then they didn't want to buy any more for another three months. There was demand out there but there wasn't that consistent demand where you could deliver those products on a regular basis, other than setting up to go into supermarkets. And that was a very different business than what we were involved in at the time, shipping to wholesale florists, to retail florists, or designers, or event planners. We were doing some direct sales to event planners and retailers. But it's also quite difficult to do field production to, say, supermarkets because they want consistent supplies, and with field production your production tends to go up and down with the weather.

Rabkin: As opposed to greenhouses.

Rider: Yes. So most suppliers, if you want to sign those supermarket contracts, you really have to have product in greenhouses that you can supply, that you can predict your quantities available more consistently.

Rabkin: Did you grow a lot of varieties of flowers?

Rider: Hundreds.

Rabkin: Wow!

Rider: It was fun, but complicated.

Rabkin: You told me when we were on our way up here that you've recently sold the flower part of the business. What made you decide to do that?

Rider: It wasn't a whole lot of fun anymore. It was a lot of work and a lot of risk relative to the returns. We did a very large volume of business and we had a large number of employees for a relatively modest return. It was a lot of time. The time, and the risk, and the capital required relative to the returns weren't that great. There were a lot of reasons. I suppose it was partly I felt like I was spreading myself too thin and not really enjoying it anymore. It's not a whole lot of fun to do a lot of things, but not be able to really do them well. And I didn't really need to do it anymore. The kids were all out of college and didn't seem to be interested in taking over the flower business. So I'm just an apple grower now, which is fine.

Rabkin: Do you have kids interested in the apple business?

Rider: Not at the moment. But who knows.

Water, Energy, Fertilizer and Other Inputs

Rabkin: Well, let's come back to the apples for our last few minutes. I didn't ask you about water or energy. Do you have any particular challenges with any of those?

Rider: Well, let's talk about energy use. It's interesting to compare, say, apples with some other commodities. If you're growing cotton, the fuel for your tractor, or the fuel for pumping water is a significant part of your total operating costs.

With apples, it hardly makes any difference. I put almost as much fuel in my pickup as I do in the tractors. Certainly, my crew burns a lot more fuel driving to work than what gets burned in our farm equipment, so we certainly don't like to see fuel prices going up.

We use relatively modest amounts of water compared to other crops. We use six to nine acre-inches of water, less than an acre-foot, generally speaking. I mean, it's important. It has to be done. But in terms of percentage of our total costs, they're relatively insignificant.

Rabkin: And how about what you're using for fertilizers or other inputs, if there are any?

Rider: The only thing we're using for fertilizers right now is we grow fava beans, bell beans, small seeded fava beans, as a cover crop in the wintertime. That supplies all of our nitrogen. We did use compost in our early years, and just did not feel that it was cost effective. Expensive to buy, expensive to apply, and just very difficult to place it where the roots can effectively pick it up. We will buy compost if we replant an orchard, and work it into the soil. I feel that that makes some sense, to plant that tree root into soil that's been amended with compost. But we tried putting it down the row centers and discing it in, or putting it under the trees where you can't really incorporate it in. We just really didn't see any benefit to it. Whereas if we plant bell beans, we can see that the trees are gaining some nitrogen from it. And if we plant more bell beans, why, we get more nitrogen out of it. It's a somewhat inexact practice, because the yield of the bell beans varies from year to year based on the weather, and it depends on how

early we can get them planted, and what the temperatures are early versus late. Some years they grow six feet tall, and some years they grow two feet tall, and some years they die. Some years they get diseases. But in general, we are easily able to grow more nitrogen than what we need. We have certain blocks that have less vigor than we would like, and we simply plant higher rates of bell beans in them. And some blocks are sufficiently or excessively vigorous, and we will not plant a cover crop because we want to drop the nitrogen a little bit.

Other nutrients— At some point in the future we may need to add phosphorus or potassium, but as a rule you don't want to add potassium to apples because it competes for calcium. So if you raise the potassium you tend to lower the calcium availability. And there's just no evidence at this point that the trees are lacking in either phosphorous or potassium. Occasionally we will use a zinc spray. Some of the varieties in particular are susceptible to zinc deficiency. And some of our soils are probably relatively low in zinc. Some varieties, Red Delicious, tend to show zinc deficiency symptoms, where some other varieties don't. Braeburns will show some zinc deficiency symptoms. So that's something that just in general in the Watsonville area needs to be kept an eye on. Some orchards never need it. Some need it pretty regularly.

I guess our biggest concern is that organic bell beans have become available and we've been using organic bell beans. They are three times as expensive as the conventional ones. They are over a dollar a pound. So that makes that a little less attractive than it was. (laughs) I don't think it's difficult to grow organic bell bean

seed, so I'm assuming that as people gear up for it, those prices will come down somewhat.

Rabkin: What would you pay for conventional bell bean seed?

Rider: About thirty cents, thirty-two cents.

Rabkin: Ouch.

Rider: Yes. (laughs) We get a premium for organic apples, but we don't get three times, four times as much.

Rabkin: Okay. I've kept you talking for a long time. I'm going to throw you a couple of last questions and then see if there's anything you want to tell me that I haven't asked about.

Rider: Okay.

Concerns about the Future

Rabkin: I'm wondering: if there's one thing that keeps you up at night thinking about this business, what would it be?

Rider: Well, I would like to have solutions to, or potential solutions to all of the issues. I would say that how do we replant the orchards, is one of those questions that I just have not come up with any real good solutions to. If we wanted to continue this business for a couple more generations, I really don't know how we'd go about that. Do you sell the ranch and try and buy a different one, so that you can plant? But the packing shed and the cold storages— The

ranch has been in the family for all of these years. We don't make enough to go out and buy vegetable ground to plant to apples. That just doesn't really pencil out. So that's an issue.

And I worry about new pests and diseases. Both apple maggot and light brown apple moth are potentially devastating problems if they should become established. Again, we really don't know how serious they would be and what it would take to control them, until they get here.

I could worry about all those things that are out there that I don't even know about, too. (laughs)

Rabkin: (laughs)

Rider: I guess the other thing I worry about is— Again, the reason that organic has worked for us is that the scale that it's been practiced on has been more in our size range. I've always felt that we need for organic to be just barely successful. Because if it's too successful, then the scale of operation is going to leave us behind and we're not in a position to keep up with it. If we were doing well in Washington, why, we'd go and buy the 100 acres next door for $350,000 and start planting it, and increase our volume. But there just isn't any way to do that anywhere in this neighborhood.

I worry about Whole Foods buying up all their competitors. I mean, they are growing to the point where they're a fairly large entity in themselves. They've been quite good about supporting local growers. But at some point it's going to be attractive for them to make a deal with some large shipper out of Washington

who can deliver them the same size and grades to all their stores everywhere, over a long period of time, just like the conventional markets found that to be an advantage in terms of the efficient running of their operation. So that's a concern, that it will either be too successful (laughs) or insufficiently successful.

I think if we want to keep this going long term, marketing-wise we probably need to be at some point looking at the possibilities of doing more direct marketing, or promoting local sales, or maybe doing some farmers' markets or that sort of thing.

Rabkin: Hmm. So if you imagine any of your kids getting into this business—

Rider: Yes, they would have to open a winery and a tasting room. (laughs) A restaurant, a bed and breakfast— (laughs)

Rabkin: (laughs) U-Pick.

Rider: Yes. Who knows? If you want to look forty or fifty years down the road, what we are doing now probably isn't going to work. So if we wanted to keep going with the apples we would probably have to look at a different system.

Seeing the Trees Respond

Rabkin: What do you love most about doing this work?

Rider: Well, I like growing the trees and growing the apples. I like to see a nice crop of fruit on the trees. And again, I guess this really comes back to my concerns about— I like growing a new orchard, which I just have not figured out how to accomplish. That's probably the thing I'm most jealous of. I go see guys in

other states and they're going out on this new ground with totally new planting systems, and are able to do things that I can't. I'm hemmed in here. But we're still able to grow some pretty nice crops of fruit. And I like experimenting with new varieties and seeing the trees respond well.

Rabkin: Well, thank you very much.

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[1] Rider is referring to the Martinelli's Company, which was founded in Watsonville, California, in 1868, and is one of the premier apple juice companies in the United States. See http://www.martinellis.com/

[2] According to Sourcewatch [http://www.sourcewatch.org/index.php?title=Alar_and_apples]. "Alar was a chemical, first marketed in 1968, that apple growers sprayed on trees to make their apples ripen longer before falling off. Alar breaks down to a byproduct called "unsymmetrical dimethyl hydrazine" or UDMH, which was shown to cause tumors in laboratory animals. The U.S. Environmental Protection Agency began to look into Alar's hazards in 1980, but stopped investigation after a closed meeting with Alar's manufacturer, the Uniroyal Chemical Company. In 1984, the EPA re-opened its investigation, concluding in 1985 that both Alar and UDMH were probable human carcinogens. Under pressure from Uniroyal, however, the EPA allowed Alar to stay on the market. Its use continued, even after tests by the National Food Processors Association and Gerber Baby Foods repeatedly detected Alar in samples of apple sauce and apple juice, including formulations for infants. Consumers Union and environmental groups such as the Natural Resources Defense Council (NRDC) saw Alar as an example of a regulatory system that was not functioning properly. All of this came to a head in February 1989 when the TV show "60 Minutes" did a show on the risks of Alar, to much public outcry and a sudden increase in the public's desire to buy organic apples.
By 1989, the states of Massachusetts and New York had banned the chemical, and the American Academy of Pediatrics was urging a similar ban at the federal level. On February 26, 1989, CBS-TV's *60 Minutes* aired an exposé titled "A is for Apple," which became the opening salvo in a carefully-planned publicity campaign developed for the Natural Resources Defense Council (NRDC)."

[3] See the oral history with Sean Swezey for his account of collaborative research with Jim Rider.

[4] In March 2007 the presence of the light brown apple moth (LBAM), *Epiphyas postvittana*, was confirmed in California by the U.S. Department of Agriculture Animal and Plant Health Inspection Service (APHIS). It was first found in Alameda County and as of July 2007 had been found in eight San Francisco Bay area counties and in Monterey, Santa Cruz, and Los Angeles counties. There are varying opinions as to how big of a problem this pest poses to California agriculture. See, for example, former UCSC Arboretum Director's report, "Integrated Pest Management Practices for the Light Brown Apple Moth in New Zealand: Implications for California,"
[http://74.125.155.132/search?q=cache:d52OhDvO5ikJ:www.pesticidefreezone.org/HarderNZReportFINAL.pdf+dan+harder+light+brown&cd=3&hl=en&ct=clnk&gl=us&client=firefox-a]
The California Department of Food and Agriculture began aerial spraying of the synthetic pheromone Checkmate LBAM-F in October 2007. Quarantine measures were also taken against nurseries. All of these measures were highly controversial and protested by environmental and health groups. On June 19, 2008 the State of California announced that it was abandoning plans for aerial spraying over population centers, but there is continuing controversy over LBAM and how it should be addressed.

[5] The production of apples from Washington State doubled between 2007 and 2008.