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Recent Work

Title

Shake 'n plate

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Solution

Intermediate Interventions:

- Lighter weight low-profile bioassay plates were substituted for high-profile plates to reduce the weight of the plates by 19% and the size of the grip to 3".
- Risk factors still high (Strain Index dropped from 60.8 to 40.5).

Workstation Layout

- Process was moved outside the fume hood onto a lab bench in a bay with less foot traffic and more legroom.
- Lab bench now accommodates option of sit down or standing workstation.
- Chair can now be used with adequate leg clearance, and anti-fatigue mat is available for standing.

Tool:

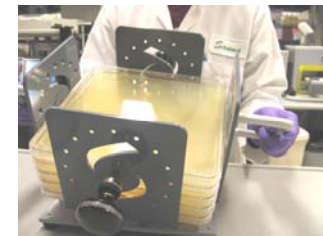
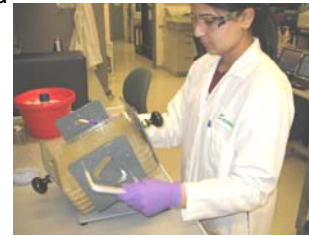
- Swiveling manual plating fixture with 3 degrees of freedom, eliminating the sustained gripping of the plates and dropping the Strain Index to a 'safe' score of 2.3.

Efficiency:

- The acceleration, tilt, and rotation of the fixture are controlled by the operator. This becomes extremely important as the glass beads in the plates must travel across the entire plate in order to efficiently produce high quality bacterial colonies, critical for subsequent steps in the production process.



Show Leg Clearance



Outcome

Safety	Grip Force 14-19% of maximum voluntary contraction; Strain Index = 2.3
Quality	The quality of the sample did not change.
Delivery/Efficiency	Process 5 bioassays per cycle with fixture. Increased throughput by 25%.
Cost	<ul style="list-style-type: none"> •Reduction in process time by 25% ROI = x mos •Since the intervention, production staff reports no discomfort after plating, and no injuries have occurred in association with this task.
Morale/Teamwork	<ul style="list-style-type: none"> •Participatory process → production staff design concept. •The new workstations ↑ flexibility for multiple operators. •Increased morale due to improvement of task and potential for future automation & cross training.