Indian Meal Moth, *Plodia interpunctella* (Hübner), Lepidoptera: Pyralidae

Origin: 1967; Stanislaus Co.; Modesto, CA; Walnut packing house

Diet/Culture: Red Flaky Wheat Bran Diet in Gallon Jars (See Appendix)

Tasks Performed: Weekly

Day	*Procedure(s)*
At Adult Emergence	Set up Egg layers (E/L); Collect/Process Eggs; Set up New Cultures

Set up Egg Layers (E/L):

Materials:

- Cultures with adult moths
- Aspirator
- 2-quart oviposition jar (E/L jar) setup as follows:
  - Small porcelain tray coated with mineral oil
  - Lid to Petri® dish (P-dish), inverted on top of mineral oil
  - Petri® dish (90 mm x 20 mm deep) with 90 mm filter paper and placed inside inverted lid
  - Large paper clip spacer placed on top of filter paper
  - 2-quart canning jar with paper towel strips (2) taped to bottom
  - Wire mesh and screw cap lid

Procedure – performed under fumehood:

1. Aspirate ca. 500 to 750 adults (1000-1500 total) from two different cultures, if possible
2. Transfer adults to 2-quart E/L jar
3. Close jar with wire mesh and filter paper lids
4. Invert E/L jar over old culture jar and rap side to discard any eggs present
5. Lay E/L jar on its side for a few minutes
6. Invert E/L jar into P-dish bottom on top of paper clip
7. If more than one E/L jar on tray, place two large rubber bands around the group of jars
8. Place tray on shelf in holding room
9. Allow an oviposition period 2 to 3 days

Collect/Process (Surface Sterilize) Eggs and Setup New Culture Jars:

Materials:

- Eggs in P-dish from E/L jar(s)
- Two (2) concave or cup-shaped pieces of 40 mesh screen
- 400 ml beaker
- Forceps (4”)
- 10% formaldehyde solution
- PhotoFlo® stock solution
- Timer
- Distilled water
- Laminar flow hood
- 7 ml dispo pipette
- Paper towels
- Filter paper, 70 mm and 90 mm diameter
- Drying racks

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Procedure – performed under fumehood:

1. Lift 2-quart E/L jar out of P-dish and set upright inside fumehood
2. Remove paper clip and filter paper from P-dish and LEAVE EGGS IN P-DISH
3. Lower fumehood sash and push 'Emergency' button to increase air flow
4. Separate scales from eggs by shaking P-dish side-to-side in air stream
5. Pool all eggs into one P-dish
6. Pour eggs through double 40 mesh screens
7. Tap gently to separate eggs from legs, scales and other waste
8. Discard E/L jars and other waste by placing in freezer
9. Pour 10% formaldehyde solution over eggs in P-dish to about ½ full
10. Add dropper full of Photo-Flo solution
11. Agitate gently side-to-side to break surface tension and allow eggs to sink to bottom
12. Decant dirty film layer (scales, legs, etc.) into another P-dish or beaker
13. Set timer for 15 minutes
14. After formaldehyde wash time, pour solution with eggs into a 400 ml beaker
15. Fill beaker about 2/3 full with distilled water
16. Allow eggs to settle to bottom of beaker
17. Slowly pour as much solution off while leaving eggs in bottom of beaker
18. Repeat steps 16 through 18 three or four times until all formaldehyde is gone
19. Refill beaker with distilled water and move to laminar flow hood
20. Stir eggs with Dispo-pipette
21. Allow eggs to settle in a pile in the center of the beaker
22. Place filter papers on paper towels
23. Take up eggs into Dispo-pipette and hold pipette vertically to allow eggs to settle
24. Distribute the eggs onto the filter papers one drop at a time
    (Each drop contains from 1500 to 2000 eggs)
    (Use one to two drops of eggs per 70 mm filter)
25. Place paper towels with egg sheets on drying racks and allow to air dry
26. Infest each new culture jar with one 70 mm filter paper (1-2 drops of eggs) – egg-side down
27. Close culture filter paper-lined, 110 mm, screened, screw-cap lid
28. Place in holding room for development
29. Place extra eggs on filter papers in incubator at 50°F
    (Eggs may be stored at 50°F for several days)
    (However, a significant reduction in egg hatch will be realized over time)