

Fly and Disease Exclusion Principles

Using Principles of IPM to control pests and disease to help maintain consistent productivity at two farms in the MMI system MFI and Princeton

Fly and Disease Control at MFI

- Chris Thomsen
- Crop Science and Entomology
- Been with Monterey for 6 years
- Mushroom Farms Inc.
- 18000sqft/week
- Legs up tray farm
- 16 growing rooms, 4 set backs, 2 spawn, runs 1, phase II

MFI Disease/Fly Back Ground

- Bubble issues at MFI
- Upwards of 30% crop loss
- What Steps we took

Finding Our Source

- We took a step back and reexamined our movements of both farm materials i.e. trays, fork lifts etc.
- Building and Air Handler Condition
- We looked at our employee movements
- What we found

Monitoring

- Use of sticky traps to keep track of our numbers and I.D. hot spots on the farm
- Proper use of these numbers to direct our efforts following our threshold guide lines.
- Keeping the employees involved.

Clean Farm

- Keeping our farm clean from the Warf to the rooms
- Cross Contamination
- Weed control
- Bubble Crew

Keeping the Flies Out

- Fly net/Hitac
- Fly Zappers
- Filters Pre and Finals
- Air Handler Audits

What We Do When Under Attack

- Re visit all practices to make sure we are not skipping steps
- Close the Door Policy
- Extra Fly Zappers
- Pesticides

Fly and Disease Control at Princeton

- History: Constructed in the mid 70's.
- A Ralston design legs up tray farm, including:
- Main Hallway with GRs, SAC area that branches off the hallway.
- Packing and Administration branch off ~ opposite the SAC area.

Weather in Princeton

- Two seasons in Illinois: Winter and Construction.
- Summer it can get hot and is often humid. Rain is not uncommon.
- Winter is cold. Not uncommon for Temps to be -10 to -20 for a week or more.
- Flies don't survive outside.

2 years ago problem with endemic fly population and dry bubble

- Facility had been expanded 5+ years previous.
- Farm went from 75,000 to 85,000 ft²/wk.
- The expansion did not include expansion of the post crop room.
- Spawned 25,000 ft²/twice a week; 35,000 ft² once/wk.

Flies and Disease cont'd

- Bubble had been a recurrent problem over the years, but winter had typically knocked the flies down significantly.
- Flies became constant and bubble became epidemic.
- Why??

Remedies to start

- Post crop some crop prior to third break.
- Use of Armor at case then at spawn.
- We would see some slowdown, but the population continued. Bubble on 1st break and flies in the SAC area.
- Hi tac around the door frames, and any openings that we could find.

What Was Found

- Fly lights in the front of set back rooms had few flies, in some cases none.
- But put one in the back of a set back room and BINGO.
- Recognized that flies from the trays not post cropped were crawling through cracks in the concrete and contaminating the crop.
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What Steps Were Taken

- Began to surface spray trays in the GR immediately with Diazinon prior to transport to PC.
- Initiated a change in the transfer schedule to enable all trays to be PC'd.
- Cut off areas in the hallway, and sprayed with Food Plant Fogging Insecticide. A bit more effective than syn pyrethroid.

Steps Cont'd

- Started a bubble program to remove and cover/sanitize every spot on the farm in every room prior to work, particularly irrigation. Crew at night with excellent lights.
- Began a program to educate and incent pickers to ID bubble, and DO NOT TOUCH!
- Used Diazinon as a wall, floor and space spray every time a room emptied.

Steps Cont'd

- Initiated the use of Armor in the compost at spawn for one tour around the farm. This extended for a tour and one half.
- Then the armor application went to time of casing.
- We began an urgent maintenance program to fill the cracks in the SB rooms. The rotation would take 3 weeks per room, sometimes 4 ½ weeks, with the work done at night.
- Schedule night sanitation after maintenance crew finished. Case back into the room the next morning.

Results Took Time

- We began to see reduction in 1st break bubble as the flies stopped crawling through the walls.
- After 6 months we had no bubble left on the farm at all. It continues that way for weeks at a time with zero bubble.
- The resident fly population was reduced greatly, and the normal impact of winter cold had its impact.