



# Buggy Bird Seed is Bad for Business

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## Buggy Bird Seed Bad for Business, For Sure!

- Rejected shipments
- Diminish value of brands & reputation:
  - Your name, reputation, product brand.
  - Your customer's brand
  - Retailer's brand
- Brand on package is at risk forever, long after it is out of your control.
- Food safety risks in distribution and retail.



# IPM for the Commodity and Food Processing Industries

- Objective: Provide you with an overview of current technology.
- Food processors have the same concerns and regulatory interests as you, and more.
- No silver bullets in IPM:  
Lots of tools & techniques  
Lots of job functions





# Trapping & Monitoring

Some of the greatest advancements in IPM over past 15 years

- Certain pests are controlled by trapping. Others just monitored.
- Not only are they trapped, but also counted.
- Bar code software for managing data.
- Data-based management decisions.
- Audit standards require trend reports.





# Fogging

*Filling the air with small aerosol droplets*

- Fogging has become an important alternative to fumigation! But NOT old fashioned pyrethrin fogging.
- Old standard - Pyrethrin alone is a poor value.
- Insect growth regulators and dichlorvos (vaponax, DDVP) are current professional tools.





# Phosphine Fumigation

Still a standard but problems mounting

- Reactive, not proactive. No residual, but population rebound may be delayed
- Use of tablets and pellets in grain has been *too easy*. Poor attention to details.
- Resistance is emerging.
- Tragic accidents, fires, and other safety concerns...Label changes, buffer zones.
- Days are numbered for DIY fumigation. Becoming a professional service.



# Protectants

- Residual insecticide protectants applied directly to grains and seeds.
- Be sure bird seed is specifically listed on protectant insecticide label.
- No animal health benefits or claims, so exempt from feed labeling requirements.



# Insect Growth Regulator (IGR) Protectants

Especially methoprene (Diacon IGR)

- Juvenile hormone mimics, not toxic in the usual sense.
- Methoprene very benign toxicologically – Exempt from requirement for a tolerance!
- Diverse sensitive uses.
- About 15 years experience in bird seed and grain industries. Wide acceptance and growing.





# Diacon IGR

- Broad spectrum
- Long residual\*
- Versatile applications
- Economical



*\*Long term protection even if your product is not managed well in distribution and retail!*



# Versatile Diacon Applications

- Treat grain streams at binning in water solutions or dust control mineral oil.
- Ready to use dry formulation (Diacon D IGR) option for grain treatments at binning.
- Treatment in batch mixers in water solution or vegetable oil polish treatments.
- Mix with binder material in production of birdseed cake products.
- Low cost & high value tank mix addition to facility treatments: empty bin treatments, crack & crevice sprays, aerosol fogging.

*See paper among WBFJ resources on treatment system design.*



# New grain protectant labeled for bird seed

## Sensat



Sensat™



- Label lists bird seed.
- New class of chemistry and mode of action.
- Higher cost of treatment.



# Protectant Packaging

- Lots of improvements in packaging: More robust, attractive, more resistant to insect penetration & breakage.
- Insects can still locate tiny imperfections. Lower quality large bags?
- New technology: methoprene IGR in packaging printing inks and coatings.
- Not a DIY treatment – Packaging supplier option.
- Apprehension diminishing in food processing!



# Protectant Netting

Expansion of concept of mosquito bed netting

- Futuristic. Under development.
- Long-residual pyrethroid insecticides in net fabric. Several years service life.
- Demo in an organic tobacco warehouse:
  - “Organic” oxygen depletion treatment.
  - Immediate movement into a warehouse space with walls and ceiling curtained with net.



# Pheromone Mating Disruption for Moths

- Same IMM + 4 pheromone as in monitoring traps.
- Except - much higher output and 6 month svc. life.
- Exempt from tolerance, economical, organic certification.







# How Mating Disruption Works

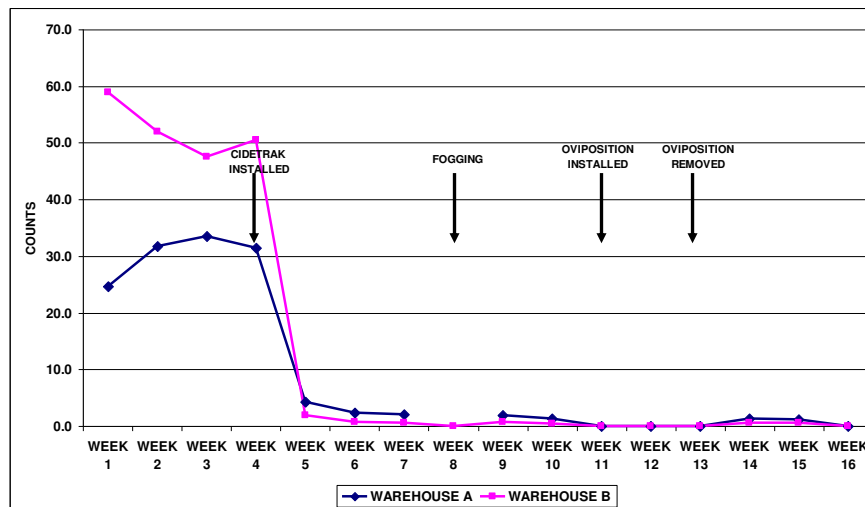
Too much female sex attractant confuses the males; delays or prevents viable mating!





# Mating Delay or Disruption

- Female IMM only live about 10 days as adults.
- Sterile if not bred within 3 days.
- “Cidetrak IMM” is leading product



*“Quality Protection for the Food & Commodity Industries”™*





# Simple Formula

- Flexibility in placement rates and patterns...
- Simple Formula:  
One Pkg./36 per 250,000 – 300,000 cubic ft.



- Place as evenly as practical.
- Season long performance for about the cost of one fogging.

- One caution: wear gloves when handling so you don't become a walking moth lure!



# Rodent Management

- Bait stations and traps outdoors, traps only indoors.
- Sanitation & harborage elimination to extent possible.
- Response to sightings





# Rodenticide Baits

Consider bait palatability to compete with highly attractive bird seed

- Rodents detect taste of active ingredients. Bait formulations attempt to counteract disagreeable taste with attractive bait matrix.
- Soft baits are generally more attractive than paraffin types.
- Least offensive active ingredient is an anti-coagulant, difethiolone.
- Most palatable bait is First Strike Soft Bait





## Cutting to the chase – Recommendation for a solid insect control program for bird seed products.

- Do the best you can with sanitation indoors and out, including equipment interiors.
- Maintain high standards of quality (including no insects!) from ingredient suppliers.
- Monitor incoming supplies, and pest population levels throughout your facility. Map and document. Develop the capability to produce trend graphs, and use to make management decisions.
- Consider a one-two punch chemical program: **Diacon** to treat grain masses and/or seed mixes, and in facility treatments to minimize insect development, plus protection of your product in distribution and retail. **Cidetrak**: Additional low cost prevention of IMM egg production and laying in your facility.



## International Trade in Pesticide Products and/or Treated Commodities

- **Cidetrak IMM** is registered for sale and use in both the US (EPA Reg # 51934-9) and Canada (PCP # 32161).
- **Diacon IGR** is registered in the US (EPA # 2724-427) but *not in Canada*. However, the active ingredient in Diacon has Codex tolerances for international acceptance of most treated commodities internationally. So, there should be no problem shipping US treated commodities to Canada or elsewhere!



# Summary



- Integrate all possible tools and techniques.
- Select pesticides for best safety, economy & effectiveness.
- Note that certain products and technologies here are beyond expertise/awareness of many small pest control providers.



Thanks for your  
attention

Happy to take questions any time

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