

Beet Armyworm and Scallion

Building an Integrated Pest Management Approach

Presenter: Mike Bernard, Plant Protection Advisor to RADA - WUSC Caribbean Volunteer



IPM, a Quick Review

- ▶ IPM strives to maintain the natural agro-ecosystem
- ▶ The first step is scouting
- ▶ It uses thresholds and a laddered approach
 - ▶ Cultural controls
 - ▶ Physical controls
 - ▶ Biological controls
 - ▶ “Soft” pesticides
 - ▶ Conventional pesticides



We are going to work together to build an IPM program for Beet Armyworm in scallion

Scouting

- ▶ How do we scout fields
 - ▶ Do we just wander around or do we use a pattern?
 - ▶ Of course we do a pattern, either W or X
 - ▶ How often do we scout a field:
 - ▶ We scout at least once a week, more if we suspect/find problems
 - ▶ Are there other methods for scouting fields other than walking them?
 - ▶ Depending on the crop/pest; pheromone traps, sticky cards, sweep net
 - ▶ Look for insect predators (if you see white birds in scallion, you know you have a problem!!)
- ▶ We also need a threshold, in this case 5 worms in 25 plants



Cultural Controls

- ▶ Cultural controls are changes to how we grow crops
- ▶ They can include resistant varieties, different growing seasons, or crop rotation
- ▶ **For BAW in scallion, our cultural controls will be:**
 - ▶ **Field sanitation, crop rotation, resistant varieties, timing of planting, clean seed or seedlings, companion crops (thyme)**



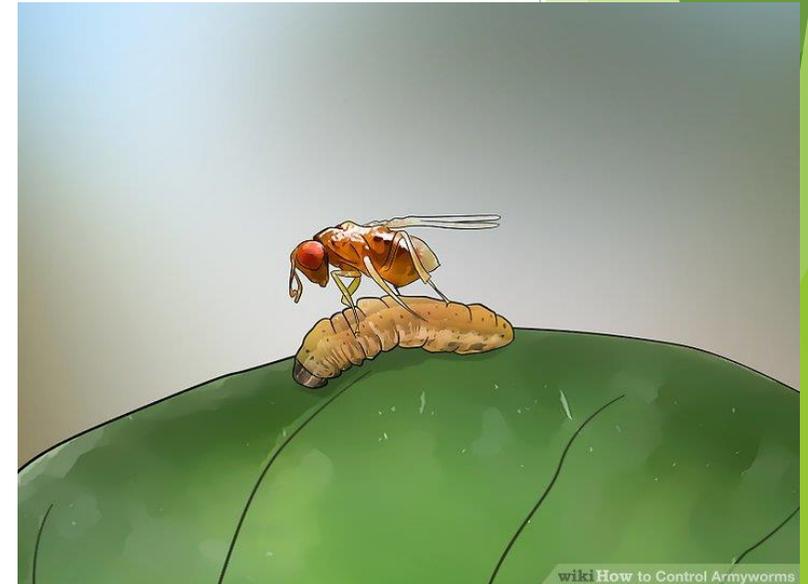
Physical Controls

- ▶ Physical controls are things we do that physically remove bugs
- ▶ This can include picking, mass trapping, clipping plants, or using barriers
- ▶ **For BAW in scallion our physical controls are:**
 - ▶ **Picking eggs and young worms, pheromone traps, clipping tops before sprays**



Biological Controls

- ▶ Biological control uses naturally occurring beneficial organisms, friendly (usually) insects, to provide low-cost, 24/7 pest control
- ▶ We can release controls (like wasps for Pink Hibiscus mealybug), attract beneficials, or plant “trap crops”
- ▶ For BAW in scallion our biological controls are:
 - ▶ Create good homes for “farmers’ friends” (beneficial insects)



“Soft” pesticides

- ▶ Soft pesticides are ones that attempt to preserve as much of the natural agro-ecosystem as possible
- ▶ They include things like Bt, or very targeted conventional pesticides (ones that attack only the pest)
- ▶ For BAW in scallion our soft pesticide options are:
 - ▶ Bt based pesticides, soap (for very young worms only), Beauveria, Abamectin, Neem, Spinosad



Conventional Pesticides



- ▶ IPM recognizes that conventional pesticides do have a place, but they are the weapons of last choice
- ▶ They are last choice because they often reduce the number and variety (diversity) of beneficial insects, and often need repeat applications
- ▶ Insects also develop resistance to pesticides, so the less we use them, the longer they remain effective.
- ▶ If the pest is only in a small area, just spray the area affected
- ▶ **For BAW in scallion our conventional pesticide options are:**
 - ▶ **Lambda cyhalothrin, Indoxacarb, Cyromazine, Lufenuron**

IPM in Practice: Quiz Time!!

- ▶ We now have a laddered IPM program for BAW in scallion
- ▶ We have done cultural and physical controls, and have made good habitat for biological controls
- ▶ But...scouting has found 4 worms in 25 plants. **Now what?**

- ▶ Next week we find 6 worms per 25 plants. **Now what?**

- ▶ Week after that, we find 10 worms in 25 plants. **Now what?**



Thanks for participating



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an evaluation sheet