

VEGETABLE RESEARCH PROJECTS

UMass Research Farm Field Day, August 13, 2003

***Trichogramma ostriniae* releases for European corn borer control in Pepper and Sweet Corn**

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This season we are releasing *Trichogramma ostriniae* in sweet corn and peppers to control the European corn borer (*Ostrinia nubilalis*) caterpillar pest. This species of *Trichogramma*, which was brought to the United States from China, is a parasitic wasp that prefers to lay its eggs in the eggs of the *Ostrinia* genus of moths. These miniscule *Trichogramma* feed and develop in the ECB egg mass, killing the eggs and emerging as adults ready to mate and lay eggs in other egg masses.

As part of a collaboration with researchers at Cornell University, innoculative releases of *T. Ostrinia* were made twice per field in 5 commercial fields of early season sweet corn at a rate of 30,000 wasps per acre each time. To track the parasitism rates, ECB egg masses were searched for and collected in each field release and in control fields of the same variety and planting date in which no releases were made. The corn was also scouted for ECB damage during pre-tassel stage and sprays were applied, if needed, according to IPM thresholds. Fewer sprays were needed and applied in 4 out of the 5 release fields compared to their controls. Also, in 4 out of the 5 fields less damage and fewer ECB were found in the corn ears and stalks at harvest.

Additional work on use of *T. ostriniae* in pepper was made possible by a grant from the New England Vegetable and Berry Growers Association. Releases of *Trichogramma* in peppers here on the research farm and in a commercial field are being done at a much higher rate (50,000+ per acre), as migration out of the peppers is a concern and peppers are susceptible to European Corn Borer over a five-week period. 4 weekly releases are being made beginning at the outset of the second generation flight of ECB. Here on the research farm peppers will be harvested weekly and a subset will be examined for ECB damage.

Sweet corn harvest results: European corn borers and damage in ears and stalks.

| | | Ears (100) | | Stalks (50) | | # Sprays | (warrior or Spintor) |
|----------|----|------------|----------------|-------------|---------|----------|----------------------|
| | | ECB | ECB Dam | ECB | Tunnels | | |
| Pray | R | 0 | 3 | 5 | 10 | 1 | |
| | NR | 0 | 4 | 2 | 12 | 2 | |
| Rex | R | 0 | 1 husk | 0 | 7 | 1? | |
| | NR | 1 | 1 ear | 0 | 13 | 2? | more than release |
| Marini | R | 2 | 2 husk; 2 ear | 0 | 6 | 0 | |
| | NR | 1 | 1 husk; 1 ear | 0 | 6 | 1 | |
| Wisseman | R | 0 | 2 husk | | 6 | 0 | |
| | NR | 1 | 10 husk; 1 ear | 3 | 40 | 1-2 | |
| Wisseman | R | 2 | 4 husk; 5 ear | 8 | 25 | 1 | |
| | NR | 1 | 7 husk; 3 ear | 0 | 18 | 2? | |