Tomato Fruitworm in Flight

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The beginning of June usually means we are about to see a large increase in flights of tomato fruitworm, *Helicoverpa zea,* in search of corn or tomatoes to lay eggs on. Tomatoes are all over the board when it comes to maturity right now, with fully ripe Bradley county tomatoes in the South and a lot of small and wimpy plants in the North that have suffered many cold nights. Regardless of their stage, most people have fruit and flowers on the plants and they are prime targets for serious losses due to tomato fruitworm feeding. See below for recommendations on scouting for this pest and which effective products to rely on for management.

Scouting for Tomato Fruitworm

As the name suggests, people usually see fruitworm once they already have some size to them and are feeding on the fruit they hope to sell. However, the trick to managing this pest with minimal losses is to try to target it when it is most vulnerable and before it begins feeding on fruit. As with most caterpillar pests we deal with, this means trying to control the larvae just as they hatch.

Tomato fruitworm generally lays its eggs on the tops of leaves or other plant structures near the top of plants. These eggs are spherical or domed in shape and are about half a millimeter in diameter and height (Picture 1). Fruitworm eggs take about 3-4 days to hatch before 1st instar larvae will begin to feed on small amounts of leaf material and move inward towards the center of plants. These larvae generally feed on minimal amounts of leaf material before they molt to their 3rd instar and move to flowers and fruit (Picture 2 and 3). Finding fruitworm eggs is relatively easy compared to looking for larvae or feeding damage on plants. Larvae are near impossible to find after they hatch and before they start feeding on large amounts of leaf material or reproductive parts in their 3rd instar. Begin scouting weekly for eggs once plants begin to take off all the way through harvest. Fruit samples should also be checked for escaped worms.

Picture 1 – Tomato Fruitworm eggs present in large amounts on tomato leaves.

Picture 2 – A 3rd instar tomato fruitworm still feeding on tomato leaves and feeding damage from tomato fruitworm on unopened flowers.

Managing Tomato Fruitworm

Insecticide applications for tomato fruitworm should not be automatic, as not all growers will see enough pressure to warrant applications throughout the season. Thresholds for control are based on both egg counts and the number of escaped worms found in fruit (Picture 3). Initiate an insecticide spray if you are finding 1 egg per 10 plants. I would recommend you thoroughly check 10 plants in multiple places throughout your plantings, as moths often will lay many eggs in a small area. Continue to scout for eggs after you make an insecticide application to determine if you need additional applications. Growers should also check fruit for escaped worms that were either initially missed during egg scouting or were not controlled by the insecticide application. Make additional applications if 3 escaped worms are found per 100 cut fruit (Picture 3).

Picture 3 – Escaped worm feeding on tomato fruit.

There are many options for controlling tomato fruitworm, but only a few that work very well. Most growers rely heavily on pyrethroids such as Warrior or bifenthrin for suppression, but fruitworm

resistance to these products is well established and is known to lead to escaped worms. Additionally, these are broad spectrum insecticides that can flare both mites and aphids. More selective alternatives such as the diamide products, Coragen or Exirel, are less likely to flare secondary pests, have long residuals, and have no known resistance. We trialed these last year vs. pyrethroids and saw impressive results (Figure 1). Other alternatives to pyrethroids include spinetoram products and some effective biologicals. Take a look at the Southeast Vegetable Handbook for additional recommendations and efficacy data.

As always, give me a call at 479-249-7352 if you have any questions at all. We are trialing a number of additional products this year for this pest and the results will be posted this winter.

Aaron Cato

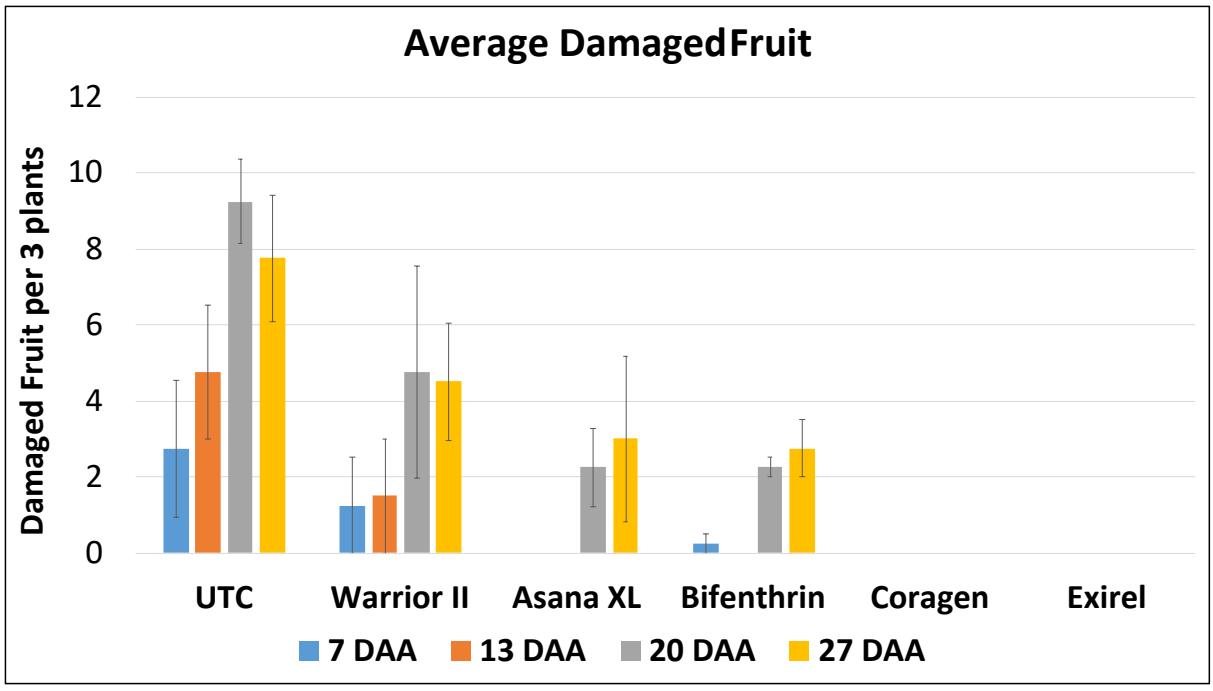

Figure 1 – 2020 Efficacy data for tomato fruitworm. Only 1 application was made at 10x threshold based on egglay.