

Tomato Fruitworm Numbers Increase Earlier than Normal

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With all the rain and storm events moving through the state we've seen tomato fruitworm, *Helicoverpa zea* (also known as corn earworm), flights throughout June that are much higher than normal. In May 2023 and 2024, we observed flights of 200+ tomato fruitworm per week, but we saw very little movement of tomato fruitworm throughout June. This May we still observed 200+ fruitworms in some traps across several weeks, but in June we observed a huge increase in numbers. At several locations we observed over 1000 or even 2000 tomato fruitworm per week. Pictured below on 6/23/2025 is a hartstack trap we have at Kibler, AR that was emptied only three days prior, with well over 100 moths captured per day since (Picture 1). I personally have never observed 2000 moths in a trap in Arkansas and it is already translating to large numbers of larvae in sweet corn (Picture 2).



Picture 1 – Tomato fruitworm captured in a hartstack trap on 6/23/2025 at the vegetable station in Kibler, AR. This trap was emptied only three days prior to this picture being taken, indicating well over 100 moths being captured per day.



Picture 2. Silks from sweet corn in Kibler, AR with several tomato fruitworm eggs present.

What does this mean for the rest of the year?

We generally expect large flights around the 4th of July holiday, which is the next generation produced by our May flights. Frequent rainstorms in the late spring moving through Louisiana and Texas likely moved more moths through the state than normal. This likely means increased pressure throughout the year, which is currently resulting in increased pressure in sweet corn. Any sweet corn silking for the last month likely has yielded several caterpillars in every ear if not properly protected. I expect this level of pressure to continue and would urge sweet corn growers **NOT** utilizing Attribute Plus or Attribute two sweet corn varieties to spray every other day.

Tomato growers need to get out and scout **ASAP**. Thousands of moths captured throughout June means a high risk in Tomato into July. Moths captured in traps generally result in visible injury within 7-10 days (Picture 3), but eggs can be observed immediately and should be used to trigger insecticide applications (Picture 4). See more information about current moth flight numbers with our interactive map at this link www.uaex.uada.edu/hort-ipm. We are continuing to scout tomatoes and other crops across the state and will post updates on [Facebook](#) and the pest page linked above.



Picture 3 – Tomato damaged by tomato fruit worm in Hope, AR on May 10th 2024 after observing eggs on May 1st. Frass can be seen by a feeding hole in the fruit. Picture taken by Taunya Ernst.

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 tomato plants. These eggs are spherical or domed in shape and are about half a millimeter in diameter and height (Picture 4). 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 3 and 5). 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. They become much easier to find when they burrow into fruit, but that is after large economic losses are already incurring. 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 after applications, but also in initial scouting to ensure you aren't missing worms.



Picture 4 – Tomato Fruitworm eggs present in large amounts on tomato leaves.



Picture 5 – A 3rd instar tomato fruitworm still feeding on tomato leaves (left) and feeding damage from tomato fruitworm on unopened flowers (right).

Tomato Fruitworm Threshold

Insecticide applications for tomato fruitworm should not be automatic (Figure 1), as not all growers will see enough pressure to warrant applications throughout the season. Thresholds for control are based on egg counts and the number of escaped worms found in fruit or on plants (Picture 4, 5, and 6). 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 (Pictures 3 and 6).



Picture 6 – Escaped worm feeding on tomato fruit.

Insecticide Options for Tomato Fruitworm

There are many options for controlling tomato fruitworm, but only a few that work very well. Most growers rely heavily on pyrethroids such as lambda cyhalothrin or bifenthrin for suppression, but fruitworm resistance to these products is well established and is known to lead to escaped worms. We've assessed the effectiveness of pyrethroids for four years in research trials at Hope and always see inadequate suppression, sometimes even when sprayed weekly (Figure 1). Additionally, these are broad spectrum insecticides that can flare both mites and aphids. We think the uptick in mite issues across southern Arkansas are directly correlated with reliance on these broad-spectrum insecticides. More selective alternatives such as the diamide products, Coragen, Shenzi, Harvanta, or Exirel, are less likely to flare secondary pests, have long residuals, and have no known resistance.

We have trialed the diamides vs. pyrethroids for 4 years now and have observed impressive results (Figure 1). When targeting insecticide applications based on the egg threshold mentioned above using diamides, we saw half as much damaged fruit compared to pyrethroids sprayed on threshold or even sprayed every week in 2021. In 2022 pressure was higher and we still did not see a significant difference in our weekly sprays vs. 2 shots of Coragen. One thing to consider when using diamide products like Coragen or Shenzi is the residual activity you can expect. We think you should expect 21 days of activity when using a mid-high rate of those products.

Other alternatives to pyrethroids include proclaim, spinetoram products and some effective biologicals. Take a look at the [Southeast Vegetable Handbook](#) for additional recommendations and efficacy data. One product that likely isn't in the handbook yet is [Shenzi](#). This is a new generic version of Vantacor (row-crop version of Chlorantraniliprole, previously known as Prevathon) but also has many specialty crops on the label. Shenzi is likely to be much more easily available in Arkansas since it has the row crop label, and also should be at a row crop price. Be sure to check rates before mixing up, Shenzi,

Coragen, and Vantacor all contain different amounts of chlorantraniliprole and have different use rates. We trialed all of these products in 2023 and 2024 and you can see the data from 2023 below in Figure 2.

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

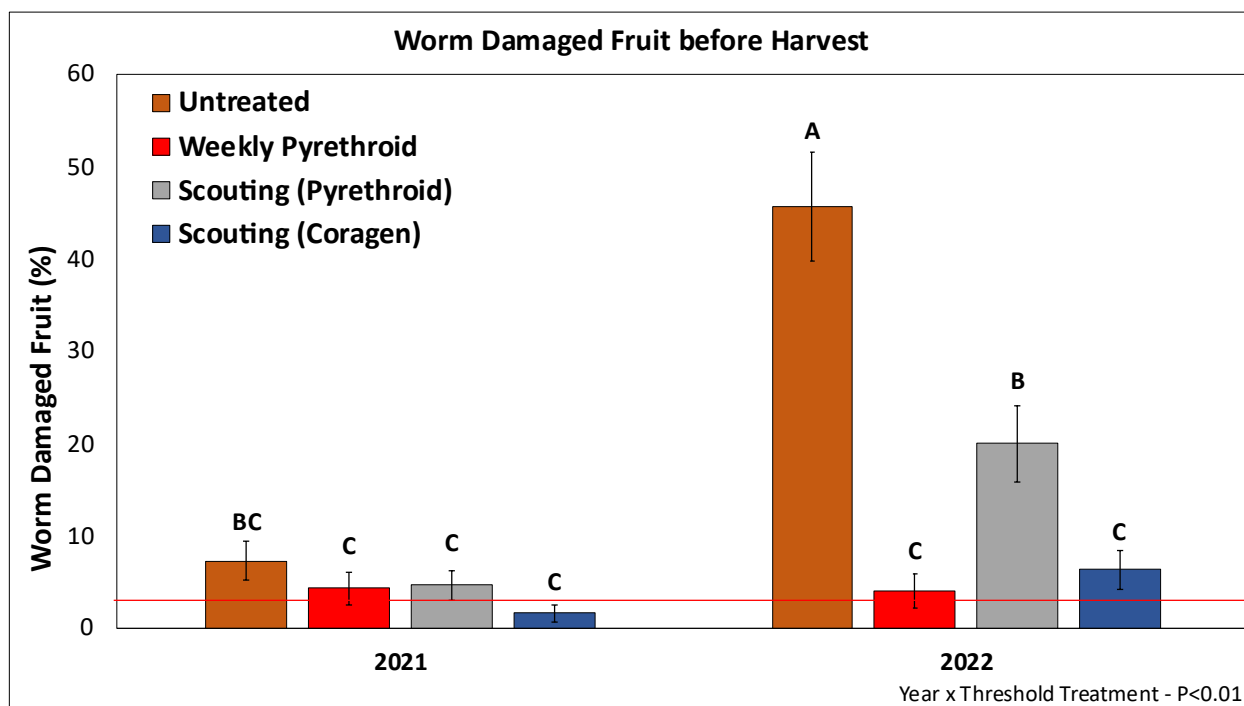


Figure 1 – 2021 and 2022 insecticide threshold data for tomato fruitworm at Hope, AR. Weekly pyrethroid plots were sprayed each week during fruiting (5-6 apps) while only 1 and 2 applications were made in 2021 and 2022 respectively for scouting based sprays. Scouting-based sprays were made at a threshold of 1 egg per 10 plants. The red line indicates a 3% fruit damage threshold that would warrant additional applications and is a good metric for economic losses. Based on these data, applying weekly pesticide applications for tomato fruitworm is not necessary and not sustainable. 1 to 2 well timed applications of a diamide (coragen) performed as good or better than weekly pyrethroid sprays. Pyrethroid resistance is present in Arkansas but may vary in impact from year-to-year. Pyrethroid-based thresholds are not likely to be effective and weekly sprays are likely to still yield unacceptable levels of escaped worms and fruit damage, while flaring other pests

Tomato Efficacy Trial in 2023 – Hope, AR

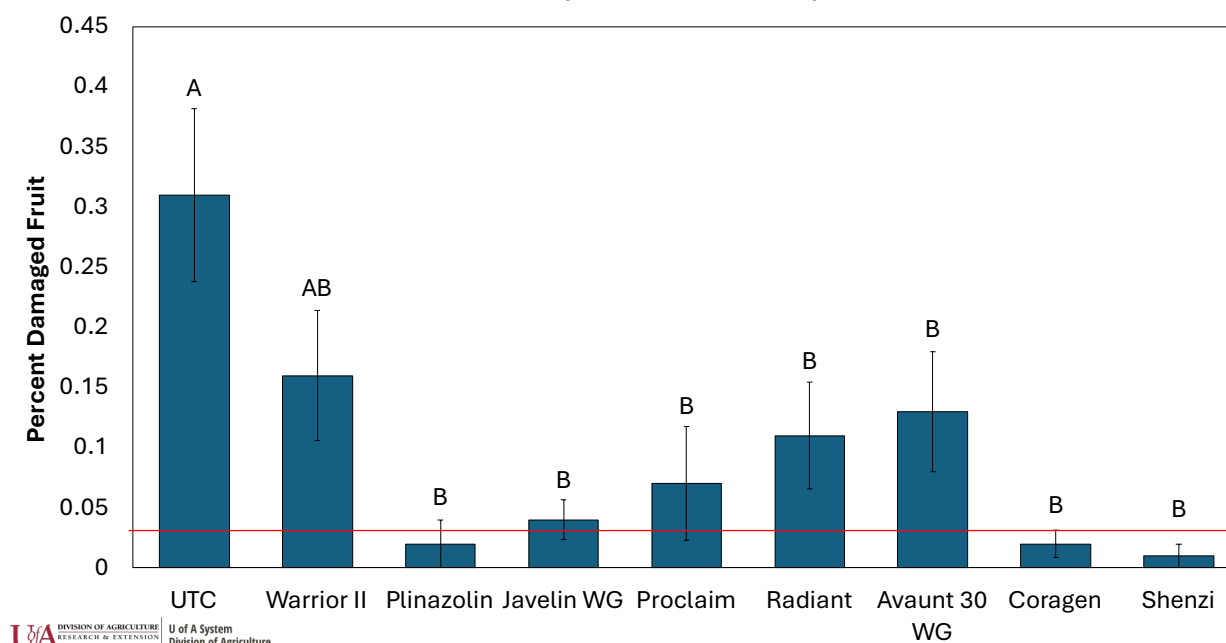


Figure 2 – Tomato insecticide efficacy trial in 2023 at Hope, AR. Eight insecticides were trialed and all products were applied at the same time once threshold levels of tomato fruitworm eggs were observed. Javelin was applied every week for 4 weeks due to extremely low residual with *Bt* products. Plinazolin is not currently labelled for use in tomato and cannot be purchased as of 2024. All insecticides with under 3% fruit damage were considered excellent products (**Coragen, Shenzi, and Plinazolin**) while Proclaim and Javelin (weekly apps) would be considered very good. Rates were as follows: Warrior II – 1.92 fl oz, Plinazolin – 5.13 fl oz, Javelin WG – 1 lb (4 times), Proclaim – 4.8oz, Radiant – 7 fl oz, Avaunt – 3.5 oz, Coragen – 5 fl oz, and Shenzi 2.5 fl oz.