Entrapment® Insecticide powered by Rhexalloid Technology

Post Application

How To Evaluate Your Entrapment Application

Day Of Application

Entrapment insecticide utilizes a physical mode of action to control insect and mite pests. After your Entrapment application, the treated leaves should have uniform drops distributed evenly on the leaf surface as shown in the images.



✓ Ideal droplet size and spray coverage



✗ Suboptimal droplet uniformity and poor spray coverage

Days 1-4 Post Application

Entrapment droplets are anchored to the leaf surface and can control insect and mite pests in 3 ways. It is important to understand that Entrapment's physical mode of action does not work the way conventional insecticides/miticides do where dead bugs are counted several hours post application.

	TARGET	ACTION	RESULT
ENGULF	Very small pests (<1mm) are trapped inside droplets. Engulfed pests are too small to release themselves from the droplet and suffocate.	When the droplet dries, the suffocated pest may appear to be normal. Eventually suffocated pests will desiccate leaving only their exoskeletons. This may take a few hours to several days depending on air temperature and relative humidity.	A key indicator of Entrapment performance is cessation of pest mobility and feeding.
TRAP	Slightly larger pests (1mm to 3mm) can become stuck to droplets once any body part comes into direct contact with a droplet.	When viewed immediately after an Entrapment application, the trapped pest often appears to be highly agitated, trying to break free of the droplet. When the droplet dries, the pest will be glued to the leaf surface but otherwise may appear to be normal.	It may take several hours to a few days but eventually the trapped pest will desiccate leaving only an exoskeleton.
IMMOBILIZE	Larger pests (>3mm) have sufficient mass capable of breaking the adhesive force of the droplet. However, when these pests move across the treated leaf surface they come into contact with droplets, picking up its contents on their bodies.	After contact with several droplets, their body will become coated with Entrapment. When this droplet material dries, the pest becomes physically immobilized in three ways: movement (leg joints fused), reduced respiration (blocked spiracles), and starvation/desiccation (blocked food canal).	The entire immobilization process can take several hours to several days to complete. The pest will desiccate leaving an exoskeleton.

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For best results, consult your Attune Advisor. Administering the appropriate Entrapment use rate and spray volume for your specific crop and pest will maximize success. Always read and follow label instructions.

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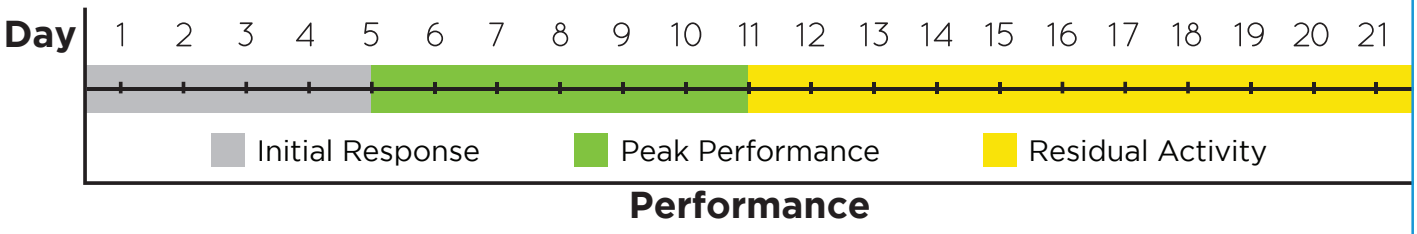
Post Application

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Days 5-7 Post Application

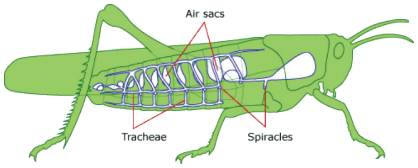
Peak Performance

Attune Ag has conducted nearly 100 studies evaluating Entrapment performance over a wide range of crops, pests and environmental conditions. These evaluations have typically involved assessing performance and live insect counts, beginning in as little as 1 day post application and continuing for a minimum of 7 days to as many as 21 days. We have found that peak performance generally occurs between 5 to 10 days after the application.

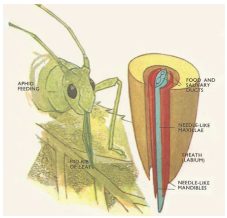


Residual Activity

Although Entrapment is not a chemical with systemic activity, we have consistently shown residual activity in our field trials. In a greenhouse setting, plants that had been treated several days before had Entrapment droplets rehydrate when misted. Another explanation for elongated control is that Entrapment is physically blocking the tiny spiracles that insects use to breathe and/or blocking the narrow food canal, which is like an esophagus, of piercing/sucking insects. Importantly, as residues can remain on the plant surface for a few weeks after the drop dries, pests feeding on treated leaves can have blockage of their food canal.



Spiracle diameter: 0.7 – 1 micron



Food Duct (Canal) Diameter: 0.7 – 1 micron

Beyond 7 Days Post Application

Beneficials

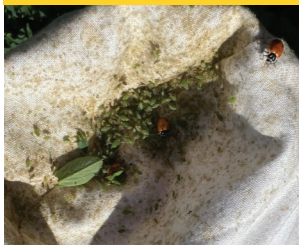
Entrapment does not negatively impact beneficial insects, whether they are pollinators, predators or parasitoids. In our launch year, we learned that the use of Entrapment actually increases the population of beneficials, which may be a first for an active insecticide. The act of immobilizing their prey in a concentrated area seems to cause predators to arrive in droves.

The 3 images below show the impact of Entrapment on lady beetles following a treatment to alfalfa for control of aphids. A 360 degree sweep net pretreatment indicated a heavy infestation. A sweep net 2 days post treatment shows a reduction in aphids and presence of a few adult lady beetles. A sweep net 10 days post treatment shows mostly lady beetle larvae.

Pre-treatment



2 Days Post-treatment



10 Days Post-treatment



Plant Health and Yield

Attune growers have anecdotally reported healthier looking plants after using Entrapment. In the alfalfa treatment above, the Entrapment treated plants grew 4 inches taller than the untreated. The increased yield is consistent with feedback we are receiving from our growers.

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