



PEST MANAGEMENT CONSERVATION SYSTEMS (595) - NRCS, VT



NEWA Weather Station

What is a Pest Management Conservation System?

A Pest Management Conservation System takes a multi-pronged, systems approach to suppress pests, with a focus on economic thresholds that trigger pest management. Thresholds can be determined by scouting, trapping, and/or weather models. If pest populations have reached threshold and other preventative methods have been exhausted, growers may decide to use pesticides. Growers that already use pesticides are encouraged to start with sprayer calibration to make their spray applications more effective.

595 Pest Management Activities:

Purchasing and Installing Weather Stations:

Used to improve the accuracy of pest outbreak predictions with an on-farm weather station linked to the NEWA (newa.cornell.edu) network models:

- **Apple Pests:** apple scab, fire blight, sooty blotch, flyspeck, apple maggot, codling moth, oblique banded leafroller, oriental fruit moth, plum curculio, San Jose scale.
- **Vegetable Pests:** Alternaria, Phytophthora, cabbage maggot, onion maggot, black cutworm.
- **Small Fruit Pests:** blueberry maggot, grape berry moth, grape diseases, strawberry diseases.

Using NEWA Weather Models:

Producers can use their own, or the nearest station to monitor thresholds. They will record when the model indicates that they have reached an economic threshold and what pest intervention was used.



Sprayer Calibration

Sprayer Calibration:

Calibrated spray equipment provides better protection of crops while reducing the likelihood of drift and over-spray. Calibration can be done on backpack sprayers, boom sprayers (2D crops), and air-blast or air-shear sprayers (3D crops).

Sanitation:

Disrupt pest cycles and/or reduce pest pressure by pruning or destroying plant tissue that harbors pests and diseases. Infected plant tissue harbors inoculum that can re-infect the crop during the current year or overwinter to re-infect during the upcoming season. Depending on the pest, sanitation can be achieved through mechanical means or amendments can be applied to promote tissue decomposition.



Sanitation for Apple Scab

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Caterpillar Tunnel & Exclusion Netting



Low Tunnels & Exclusion Netting



Automatic Roll-Up Sides



Trapping & Monitoring



Beneficial Insect Cover Crop Mix

Structures with Exclusion Netting:

- **Caterpillar tunnels:** These are temporary structures (with ridge heights >4 feet) that can be moved each season and used with or without the greenhouse plastic that is included in most kits. Using manufactured kits and exclusion netting is required for this practice.
- **High tunnel sides:** Install woven insect netting over roll-up sides, vents, and fan openings. Consider adding ventilation fans to improve airflow and prevent fungal diseases.
- **Low tunnels (821):** Covers or netting are deployed over hoops (less than 4 feet ridge height) and must be left in place during pest outbreak periods. Row covers provide spring warming whereas woven insect netting does not impact temperature. Both products can be reused season after season.

Automatic Roll-Up Sides for High Tunnels:

Address bacterial and fungal disease pressure by increasing airflow to address high humidity. Roll-up sides respond to peaks in air temperature and humidity by raising and lowering sidewalls in conjunction with an environmental controller. This saves time and labor while improving plant health.

Trapping, Scouting, and Monitoring:

Some methods of scouting and monitoring rely solely on labor, while some trapping methods require physical materials AND labor. This is intended to help growers to employ a new technique and compensate them for the amount of labor required to keep good records. Economic thresholds and trapping/monitoring materials must be supported by applied research from UVM or another New England land grant university.

Supporting Conservation Practices:

Pollinator and Beneficial Insect Habitat (420):

Plant a wildflower meadow of mostly native, perennial flowers and native grass for wild bees and beneficial insects. Perennial habitat is key to support these insects through their entire life-cycle. Adequate buffers between sprayed crops and habitats are required.

Mulching (484):

Natural materials, like straw and wood chips, or synthetic materials, like landscape fabric, plastic films, and silage tarps. Mulch can be used to reduce pest pressures, kill sod and cover crops, conserve soil moisture, build organic matter, and more.

Cover Crops (340):

Provide habitat and food resources for beneficial insects, disrupt pest cycles, suppress weeds, and improve soil health by building organic matter and scavenging excess nutrients.

Conservation Crop Rotation (328):

Rotating between crop families helps prevent the build up of insect and disease pressure and improves soil health.

Control Alternate Hosts Species (314/315):

Invasive plants such as Bush Honeysuckle can out-compete native flowering habitat that supports beneficial insects and can be a challenge on field edges and fence lines. These plants can also be alternate hosts of crop pests.

Pest Management Practices in Action:



https://www.youtube.com/playlist?list=PLn4C7Na6dUd_b9B78C-k1XW270Ab-qv-71