

**Pest Management in High Tunnel Winter Crops**  
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In the fall of 2010 the Cornell Vegetable Program began work on a 3-year NE SARE funded project titled “Sustainable Pest Management in High Tunnel Winter Greens Production”. In this project we are working with winter-time fresh market vegetable growers to reduce losses to a number pests with organic, cultural or biorational techniques. We have had some initial successes with growers across the state and what follows is information we’ve disseminated at our field (tunnel) meetings.

Many people are new to growing during fall and winter, so first let’s review the crops:

Lettuce, Spinach, Chard, Asian greens (Mizuna, Komatsuna, Bac-Choy, Mustards...), Turnips  
Radishes, Carrots, Beets, and more

Next let’s review the pests:

Aphids, Slugs, Thrips, Cabbage Worms, Grasshoppers, Rodents, Downy Mildew, Botrytis

What are the challenges?

More and more vegetable growers are using their tunnels year-round. This is great for marketing but, summer crops such as peppers and cucumbers can be very attractive to aphids and other pests which then holdover on the winter crop.

For organic tunnel and greenhouse production biological control is a good option, however most beneficial insects are not active during fall/winter temperatures. If we were to use them it would have to be very early in the planting season, or even in the summer crop.

This leads us next to the use of materials suitable for cold weather greenhouse application. Fortunately we do have some options which we are trialing in this project. They include Suffoil, Molt-X (a neem derivative that is pending OMRI approval), and Mycotrol; all for aphids. The Mycotrol is a naturally occurring aphid pathogen. Bts, such as Dipel or Xentari, are organic and have little impact on beneficials; however they are generally considered most effective under warm conditions.

Resistant varieties are also important for pest control. Unfortunately some of our favorite winter crops, such as spinach, are highly attractive to pests such as aphids. Furthermore slugs seem to eat anything! We are researching just which crops and varieties can be used to minimize pest damage.

The common theme to the above measures is that pest management starts early. This point is true in all farming, but much more so in fall/winter crops, as temperatures inhibit the efficacy of some of our best spray options.

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