



Greenhouse Pest Message, March 17, 2023

Leanne Pundt, UConn Extension

Everyone is very busy as greenhouses continue to fill, new plugs are received, and planting continues.

Watch for occasional **aphids**, **spider mites** and **thrips** on susceptible crops.

Preventing Spray Damage

One of the most frequent question I receive is diagnosing possible spray damage from pesticides (insecticides, fungicides, plant and even surfactants.)

Spray damage is a greater concern in an enclosed greenhouse environment where plants are growing more rapidly than outdoors. In the greenhouse, plant tissue is more tender and succulent, making young plants more susceptible to pesticide phytotoxicity. Spray damage is also more of a concern on ornamental plants, especially on tender blooms.

Unlike a disease caused by living organisms that tends to occur at random and develop over time, spray damage often occurs at once, due to a **singular event** over a short time depending upon when and what you sprayed.

Some of the symptoms of possible spray damage include spots on or at the leaf tip, or leaf margins that are pitted. Symptoms are often on leaves of the same age or stage of development. Leaves may be distorted with curling, crinkling, or cupping of leaves. Plants may be stunted when there is an overdose of a plant growth regulator or abnormal growth can occur.

Some questions to ask yourself:

- Look at the pattern of damage.
- Is it a spray damage pattern? Plants closer to the sprayer may have more damage and residue than plants further away.
- Are the upper leaves protecting the lower leaves from the spray application?
- Did the damage occur “overnight”?
- Spray damage may take several days to a week to appear, especially if buds are injured, but will tend to appear all at once.



Figures 1 & 2: Spray Damage (note pitting) on older leaves (on left) but new growth improves with no progression of symptoms (on right). Photos by L. Pundt



Figures 3 & 4: Plant growth regulator overdose on incoming begonia plugs (on left), and spray damage that developed on only one variety of verbena (on right). Photos by L. Pundt

As plants grow, the damage will remain on the oldest leaves and the **new plant growth will appear healthy**. Abiotic disorders tend to follow a **regular pattern**. Diseases caused by pathogens tend to be random and begin with just a few plants.

Always test first on a few plants when using a new (to you) product or tank mix. Leave a few plants of the same variety untreated as a control for comparison.

Some Tips on Preventing Phytotoxicity (Plant Injury) From Pesticide Applications

- Read labels carefully. Pay attention to dosage rates, application instructions and phytotoxicity information.
- Read labels carefully for all plant safety information. Pesticide labels usually mention sensitive plant species and cultivars. The sensitivity of unlisted plants to the product or tank mixture is unknown
- Read any technical brochures on the product (often available on the manufacturer's website).
- Apply pesticides in the early morning or evening. Applications made in the early morning allow plant foliage to dry before temperatures reach 85 to 90°F.
- Take special precautions when using pesticides containing either petroleum or paraffinic base oil. Always make applications when conditions allow plant foliage to dry quickly.
- Add surfactants only when recommended on the pesticide label.
- Use care when tank-mixing pesticides as this may increase the chance of harming crops.
- Apply pesticides only after crops have been irrigated. Never apply pesticides to plants that are under water-stress.
- Never use herbicides within the greenhouse unless they are specifically labeled for use in the greenhouse.
- Never use a sprayer for insecticides that was previously used to apply herbicides.

Pesticide labels can be found on the manufacturer's websites or on the EPA PPLS (Pesticide Product Label System) <https://www.epa.gov/pesticide-labels/pesticide-product-label-system-ppls-more-information>

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