



Greenhouse Pest Message, April 7, 2022

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Continue to monitor for **aphids, thrips, fungus gnats** and **botrytis**. See previous pest messages for more information.

With the high costs of fertilizer this spring, it is especially important to closely monitor your fertilizer use and not to apply more than your plants need. Excess nitrogen fertilizer also encourages succulent plant growth that is more attractive to sucking insects such as aphids, whiteflies and mealybugs and damages root tips leading to Pythium root rot.

Here are some online resources on plant nutrition for you:

Nutritional Monitoring: Fert, Dirt and Squirt:

<http://www.fertdirtandsquirt.com/>

This website contains crop factsheets on annuals, perennials and vegetables, herbs and fruiting plants listing target nutrition parameters, fertility programs and photos of some common issues on these crops.

There is also a section on monitoring methods including:

Monitoring and Managing pH and EC using the Pour Thru Extraction Method

<http://www.fertdirtandsquirt.com/pdf/monitoring.pdf>

Don't Get Burned: Managing Salts in Greenhouse Production

<http://www.fertdirtandsquirt.com/pdf/managing-salts.pdf>

and many more resources. Check it out!

The **UMass Extension Greenhouse Crops and Floriculture Program** has several fact sheets on plant nutrition:

<https://ag.umass.edu/greenhouse-floriculture/fact-sheets/plant-nutrition>

Tips to Prevent Spray Damage

One of the most frequent question I receive is diagnosing possible **phytotoxicity** (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. Plant tissue is more tender and succulent, making plants more susceptible to pesticide phytotoxicity.



Figures 1 & 2: Certain varieties of verbena are more sensitive to spray damage from acetamiprid (Tristar) (on left) and basil seedlings suffering from spray damage (on right). Photos by L. Pundt

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**. Some of the symptoms of possible spray damage include:

- Spots on or at the leaf tip,
- Leaf margins that are pitted,
- 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.
- Did the damage occur “overnight”?
- Spray damage may take several days to a week to appear but will tend to appear all at once.

Here is a good article by Dan Gilrein: **Insecticides and Plant Sensitivity**
<http://e-gro.org/pdf/342.pdf>

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

- **Read labels carefully.** Pay attention to dosage rates, application instructions and phytotoxicity information. Some pesticides are labeled so

that the grower accepts all risks from phytotoxicity to greenhouse crops, because the risk is high.

- 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.
- 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.

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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