



HOW TO FIGHT OFF ROOT APHIDS

Root Aphid Info

Root aphids colonize and suck juices from roots in many mediums including rockwool, "grow rocks", coco, and soil. If plants appear to wilt, to have stunted growth, or have unhealthy coloured foliage and lose leaves prematurely, and the normal problems (pH, over-watering, nutrient levels, etc.) are not responsible, then suspect root aphids. Root aphids are voracious eaters, and are known to be persistent, so it requires some discipline to eliminate them. Some experts suggest treatment every other day, for a minimum of six treatments.

Root Aphids are small light green or off-white oval-like creatures with or without wings, which live on the roots of plants. Just like their counterparts above ground, they feed by sucking sap, but from roots instead of stems or leaves. There are several species of *Phemphigus* (root aphids), and unfortunately, when they are feeding in the soil there are few, if any, winged adults around to warn you. Many times root aphids will appear with or without wings, but in either case will not fly.

Once a problem has been identified with the plants, the first thing growers will notice on the infected root system is the white wax that looks like snow-flocking covering the infected spot. The affected roots often split. Root aphids tend to build up populations at the edge of rootballs. Female aphids give live birth to nymphs, and a clustering of aphids builds up on concentrated areas of the root system. Small populations are not a problem; however, when populations become high, the plants are reduced in vigor.

Azatrol:

After ingesting **Azatrol** an insect can't feed. They feel full all the time. The insects cannot shed their skin to molt, and they can't form a pupae. Ultimately the insects end up paralyzed and they die. See other **---Info Sheet---** on **Azatrol/Patrol** for more information.

Azatrol Application Rates:

Start with 1-2 gallons of Reverse Osmosis (purified) water and add **Azatrol** (1-2 oz. for every 20 gallons in the reservoir.) Mix it well inside the bucket, and then add the concentrated solution to the reservoir. Mix into your reservoir. *Example:* In a 20 gallon reservoir one would mix 1-2 oz. of Azatrol in a separate container of 1-2 gallons of water and then add that concentrate into the reservoir. Mix well.

Use every week in hydro or soil (1-2 oz. to 20 gallons) and then after control is established, maybe every other week as a preventative. We recommend using with Patrol for an even more lethal combination.

In the reservoir **Azatrol** may raise the ppms by 100-200 ppms but Azatrol is all OMRI organic stuff and it is not a fertilizer, so it's not that big of a deal if the ppms are raised. Every garden is different so monitor your plants and adjust if necessary.

Green light Tree and Shrub Systemic:

Green Light Systemic uses a nicotine derivative to control aphids. It is called imidacloprid and it works. It should be used as a systemic feeding to plants over time. Ideally start using before population is too large.

GreenLight Tree and Shrub Systemic Application Rates:

Apply 1 - 3 tsp./ Gal. Soak the roots.

Bonide Systemic:

This is the harshest stuff that we have found. It will kill larvae, root aphids, and just about anything else in the medium. Make sure you apply, then FLUSH 3-5 hours after application. *Apply to one plant first, then apply to rest of garden.*

Systemic killer Application Rates:

Mix 1oz. per 10 Gallons of solution or 1/2 oz. per 5 Gal. After application, make sure to FLUSH 4-5 hours later. Repeat as necessary.

Nematodes:

These microscopic worms are pretty awesome. They only effect soft-bellied insects like fungus gnat larvae (no animals - so don't worry!) Nematodes get sucked up into the guts of the larvae, and begin to colonize and multiply and multiply and multiply until they finally burst open the stomach of the larvae (dealing it out a very nasty death) and releasing more nematode colonies into the medium in the process.

Nematode Application Rates:

Apply 1 Million (1 packet) Nematodes per each "grow light" in your grow space. Each packet of nematodes is dropped and mixed into a 1 Gallon container of water (pH as normal) then hand applied to each plant. Then remove sponge and toss into reservoir.

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