

SESSION III: QUESTIONS AND ANSWERS®

Patrick Peterson: Did you say you applied a granular material after the plants were rooted?

Mario Lanthier: Yes. There are different commercial products on the market that contain mycorrhizal fungi. They all have strengths and weaknesses in terms of their effectiveness with various plant species. There is one that is a granular formulation, and you apply it like you would a fertilizer topdressing.

Randy Murphy: You told us you want to apply mycorrhizae after the cuttings have rooted. Have you noticed temperature having any effect on application timing?

Mario Lanthier: No. However, I haven't looked at that specifically. If the temperature is appropriate for root development, it would be appropriate for these microbes. Two things are important in the use of mycorrhizae: (1) you have to put the microbe in the soil and (2) you have to feed the microbe. Mycorrhizae don't grow well in sterile soil; they do well in soils that have high organic matter levels like container media.

Evelyn Healy: What species of vesicular arbuscular mycorrhiza were you working with, and did all the products you worked with have the same species?

Mario Lanthier: No, different products come with different species. A group from Switzerland took one spore of *Glomus intraradices*, a species that is found all over the world, and in the lab, went through 200 generations from that one spore. At the end of 200 generations they found around 50 different biotypes of mycorrhizal fungi. The question was this: are we looking at a small number of species all over the world or are we looking at a large diversity and we then have to be careful what we introduce where? That question has not been resolved. There are some species that are found all over the place, and scientists have identified some that are better at some things than others. In general, products with a mixture perform better because they cover more bases. However, products with a low number of species may be appropriate in specific situations.

Steve McCulloch: Are mycorrhizal fungi susceptible to fungicides, and how does that enter into experimental design?

Mario Lanthier: Once the mycorrhizal fungus is established on the root system it has a fairly high tolerance to most fungicides we would use in greenhouse propagation. There are exceptions. We have looked at the impact of fungicides on root development during propagation. Some fungicides are extremely rough on root elongation during propagation. Those fungicides are also very rough on mycorrhizal fungi.

Steve McCulloch: In contrast to graft incompatibilities we see in propagation, why don't plants reject the association with a mycorrhizal fungus?

Mario Lanthier: It's a symbiotic relationship; they both benefit from it. It's not that one gains more than the other. The plant gains a whole lot from this relationship, such as improved water uptake, nutrients, and protection from various root diseases.

Val Cobrian: Do you have a nematode for slug or snail control in Canada?

Jim Matteoni: No.

Anonymous: What would you recommend for slug and snail control around containers in poly houses?

Jim Matteoni: There are a couple ways of dealing with this ranging from metaldehyde baits to sprays that can be fairly nasty so are probably best avoided. On a bench you can use a copper strip on the perimeter of the bench. Snails have a difficult time crossing the copper strip because it has an electrical charge to it. It may need to be "recharged" periodically, and that can be done with salt. That won't work in large nursery settings.

Kevin Kubeck: For specialty propagators, who have small numbers of plants, is it possible we don't have the number of plants necessary to keep biological control agents alive?

Jim Matteoni: You might consider using some banker plants that will provide biological control agents on a regular basis that are predators, which have a voracious appetite and a more diverse appetite. Good banker plants include eggplant, beans, and melons.

Kevin Kubeck: We are doing some hybridization work and are concerned with the potential for biological control agents to consume pollen.

Jim Matteoni: Thrips consume much more pollen than any biological control insect.