

## Questions and Answers: Session II, Friday, 2 October, 8:00–10:00 AM<sup>©</sup>

**Neil Funston:** How will the slow sand filter work in a nursery situation deal with pesticide run-off? Will that affect the biological action?

**Loren Oki:** Based on information we've received from civil and environmental engineers pesticide run-off should not have a negative effect. If the molecule can be degraded there's going to be an organism to degrade it.

**Valerie Sikima:** How specific are the mycorrhizae to the actual plant? Can you use a broad-spectrum mycorrhizae on most plants and expect them to grow?

**Mike Amaranthus:** That's a good question. The best mycorrhizal inoculums can infect a suite of species (4–20). In terms of specificity by plant, the endomycorrhizal plants which are about 80% of the world's plant species are not very specific. The ~120 mycorrhizae form associations with 435,000 plant species. The associations between tree species and ectomycorrhizae are much more specific. If you have a specific conifer or oak, you can do a lot by specifying a particular mycorrhizal fungi. Our website <[www.mycorrhizae.com/](http://www.mycorrhizae.com/)> has more information on which mycorrhizal fungi associate with which plant species and what are some of the better inocula for those types.

**Mike Bone:** What is the relationship between fertilizer applications and mycorrhizae and what kind of adjustments have to be made?

**Mike Amaranthus:** If your available phosphorus is above 70 ppm, the mycorrhizal spores don't want to germinate. Time-release or controlled-release fertilizers are best. If you are using soluble fertilizers you may have to time your mycorrhizal inoculation when the P level is lower than 70 ppm.

**Nevin Smith:** Over the years the P level in commercial media has tended to be very high with recent trends to lower it substantially. I don't think they've hit bottom yet. We're using media where the P level is 3%–5% and still getting good growth and flowering on plants.

**Bob Buzzo:** How do you inoculate the biofilm on the sand?

**Loren Oki:** If there is a pollutant to be degraded, the microorganism to degrade it will be present too. We didn't have to do any inoculations at all. The other neat thing about these systems, as the composition of the pollutants change the microorganisms change and adjust so it's somewhat of a magic system.

**Allen Bush:** Is the smoke starter product you use commercially available?

**Nevin Smith:** Yes, it comes from South Africa. You can contact the "FineBush-People" on the web at <<http://finebushpeople.co.za/>>. You buy little packets of 4-in. filter disks that you dissolve in water.

**Allen Bush:** Are you using simple lighter fluid to remove the waxy coating on some seeds?

**Nevin Smith:** Yes. Some of the charcoal starters are quite pure hydrocarbons. What you have to watch out for are chemical pollutants that include some anti-

flaming agents. What's happened with white gas is they've added anti-flash agents that seem to be toxic to seeds although that's unproven at this point.

**Susana Vanzi-Canton:** John, you briefly touched on the program you're working on for co-locating water zones. Is that something that's established or is it just in the beginning stages?

**John Rader:** It's actually just in the beginning stages. I'm working with an associate in Australia. Australia is the leader in determining what is truly a low-water-use plant and try to set criteria for that. We are looking for other partners who would like to participate in this effort on a "think tank" basis and financial basis. We'd like to work with universities to find the best way to do this. We're a propagation/production nursery so we're not necessarily fully equipped with all the things we need, but we think this is what needs to be done.

**Loren Oki:** I have a follow-up to that. I have a research project looking at water use of plants growing in the California landscape. We imposed specific irrigation treatments to these plants and measured growth and plant performance. We found some surprises. *Ceanothus*, a plant we thought would not do well with high (80% reference ET) water rates, did fine. There were other surprises that brings into question the landscape water budget lists currently being used.

**John Rader:** We'd also like suggestions for other plants to test besides ones that EuroAmerican grows. We want to make this a joint effort with the industry.