

Liverwort and Algae: Chemical Control[®]

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TIMSEN

Liverwort control has become a hot topic. We've seen lots of research effort into a range of control measures. Cinnamite, hazelnut shells, and meadowfoam have all been researched. The Zerotol people gave us Terracyte, which needs to be applied pot-by-pot with a specialized applicator. None of these methods seemed very user-friendly or effective.

My research led me to two other products, one new to the United States, but not the florist industry of Columbia — Timsen.

Timsen turns out to contain both urea and a quaternary disinfectant and now boasts a label that allows us to drench plants at 1600 ppm. This, provided it is truly a drench and not a spray, controls liverworts quite inexpensively. Phytotoxicity has not been a concern so far, but I wouldn't want to try 1600 ppm on unrooted tissue culture liners or seedlings with just one pair of leaves. Great stuff and it may also work as a chemigated algicide at just 25 ppm. I have trials underway. Theoretically, Timsen would be injected every month or so as a shock treatment. I would then flush with some clean water before returning the dosatron to the Zerotol stock tank. I have found Zerotol to be a great preventative fungicide. If Timsen does clean the algae from the pipes I could reduce the Zerotol from 1:5000 to 1:10,000 and save money.

LIVERWORT CONTROL WITH SYLLIT 65W—A TEST

Syllit 65W is used as a fungicide in the fruit tree industry. It also has a Section 24°C label that allows it to be used on nursery stock as a fungicide. It smokes liverwort at 1½ lb 100 per gal. I believe this will be a safe product for most greenhouse nursery stock, but do your own tests and research.

One word of caution — apple scab has shown resistance to the active ingredient, Dodine, in recent years, so drenching tissue-culture-produced pear rootstocks for liverwort control could conceivably be a bad idea if they subsequently develop Syllit resistance and scab can't be controlled in the commercial orchard.

WORT—ELECTRONIC DISCUSSION GROUP OF RESEARCHERS AND GROWERS STUDYING CONTROL OPTIONS

Oregon State University's (OSU) North Willamette Research and Extension Center continues to study the control and management of *Marchantia polymorpha* (cosmopolitan liverwort) and *Sagina procumbens* (pearlwort) in container nursery production systems. The cost of management of *M. polymorpha* and *S. procumbens* can exceed \$20,000 per acre, often eliminating crop profitability. An electronic discussion list named WORT has been created to help researchers and growers study control options. The purpose of the electronic discussion list is to share research results, and discuss useful ideas for control and management of these two weeds in container nursery production settings. Using the list, subscribers can submit questions to OSU and other university researchers and to other list subscribers. Discussions are focused on effective chemical and nonchemical control procedures, and on the general

integrated management of *Marchantia* and *Sagina* infestations. WORT is presently a "closed" list; this means that new members can join only by request sent to the list owner. If you wish to participate, send your e-mail address to <svnen.e.svenson@orst.edu> with a request to be added to the discussion list.

Grafting Tips®

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Knife Sharpening. I use a Diamond Whetstone medium grade. These stones are available from Western Tool Supply. There are industrial-grade diamonds imbedded in steel which is then laminated to a plastic base. These stones cut into the knife blade very quickly requiring a minimum number of strokes to make a sharp knife.

These stones do not wear down like a carborundum stone so that the surface always stays flat, which will insure that the knife blade will stay with a straight cutting edge. The knife blade should be at a 2° angle to the stone and pushed as if you were cutting into the stone. For more detailed information check the Boy Scout Manuel on knife sharpening.

A Cheap Good Grafting Wax. We use a deep fat cooker (Presto Brand) to heat our grafting wax. We can control the wax temperature easily to about 150 to 160°F. I like a thin wax coating because it sticks better to the graft union. The wax formulae is ½ paraffin, ½ bees wax, and a bit of pine tar. Pine tar is available from any farm store that sells horse supplies. Horse owners use it for wounds on their horses. It makes the wax more sticky and black. The bees wax and pine tar help to lower the melting temperature of the paraffin. Works for us.

Use of Floratape for Wrapping Grafts. We usually cut the rubber budding strips from the graft after it has healed. In order to protect the graft further we wrap it with white floral tape. This tape biodegrades and does not cut into the plant stem. It also stretches with the stem growth and cambium grows well under the tape. Works for us.