From Forest Nursery Notes, Winter 2012

13. © Cleaning used media and containers with steam and hot water. Hammond, E. International Plant Propagators' Society, combined proceedings, 2010, 60:253-256. 2011.

Cleaning Used Media and Containers With Steam and Hot Water©

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INTRODUCTION

Over the past decade Heritage Seedlings production has moved significantly from a field operation to containerized production of both seedlings and grafts. High quality, expensive soilless media are readily available to facilitate this transition. So each year we found ourselves not only purchasing a mountain range of medium, but also producing one of used soil. We started with a very coarse mix and after a single growing season the structure of the mix was little changed. The mix would be perfectly functional for another year of our needs, but intuitively we knew the cast-off media were unusable. Like most nurseries there are weeds in our production system, though we wish there weren't. We work hard to remove them, but the used mix has weed seed in it and is a source for the next generation of nursery weeds; that's not something we wanted. Additionally, there were other problems that made a switch to using recycled potting media impossible.

Because we germinate seed in baskets of medium, we had a concern about dormant seed germinating the following year and potentially contaminating new seed lots. This would be a particularly dangerous problem with lots of source identified seed used for their specific genetics. Another of the obstacles to overcome was sudden oak death (SOD). During the same time period we began participation in Grower Assisted Inspection Program (GAIP), Oregon's pilot program aimed at preventing SOD in nurseries. This program forbids planting host and associated plants (HAP) in recycled media unless it is cleaned of potential *Phytophthora ramorum* spores through composting or steaming. Composting, though socially appealing, just wasn't a viable option for us. And the last problem was our medium mixing system: it required a change from switch controls to a computer so we could use all the hoppers simultaneously, mixing new and used soil by proportion.

STEAM TREATING USED MEDIA

The particular approach we took to recycling our medium is steam treatment. Accomplishing this required the purchase of a steam generator, in our case a Steam Flo manufactured by the Sioux Corporation. It is completely self-contained; all we had to do was hook up a hose and plug it into an outlet and we were generating steam. The larger job was constructing a trailer and piping system for the steam and the medium but even that was made to seem easy by our more than capable fabrication specialist, Mike Heater. He built a 10-yd dumping trailer with a steel manifold, four 3-in. pipes raised just above the floor and automatic tail gate. There are holes drilled along the bottom of the pipes, directing the steam down, every 12 in. The engineers at Sioux were very helpful answering design questions along the way.

We grow our crops in baskets of medium and to harvest we mechanically shake the media from the roots. That used medium is stockpiled about as close to the generation point as we can get it, and now equally close to the steam generator. Later,