

## Cleaning Float Trays

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The greenhouse and float transplant production systems offer many advantages to tobacco transplant producers. However, a disadvantage of the float system is that it provides an ideal habitat for the development and spread of transplant diseases due to the constant presence of water. Therefore, a key to success with these production systems is keeping the pathogens causing diseases out of the systems.

A diligent sanitation program is a MUST! The media and water being used should be pathogen-free. All equipment and tools that come in contact with the system should be pathogen-free. That means either using new trays or re-used trays must be properly washed and sanitized.

**What is available to disinfect trays?** Steam, methyl-bromide fumigation, chlorine bleach, and quaternary

ammonium chloride salts are available in Kentucky.

**STEAMING** the trays has been the most effective disinfectant, but, the cost is high and some items are damaged by steaming. Most studies indicate that the trays need to reach at least 160 degrees F. for 30 minutes, but this method presents problems for farmers in developing equipment to meet the temperature and time required.

**FUMIGANTS:** Methyl bromide with 1% chloropicrin has been almost as effective as steam in some of the tests. It provides excellent control of Rhizoctonia and other fungi on the surface of the tray. It will greatly reduce the level of Pythium, but has not been as effective as steam or proper bleaching in reducing Pythium, probably because a significant amount of Pythium is found embedded in the tray. It is important to have an airtight plastic seal, to pre-wet the trays, and to avoid large stacks of trays. Methyl bromide is heavier than air, so it sinks,

therefore, best results occur with long, short stacks rather than tall, deep stacks. We have found little control is provided at the low rates, so use the maximum labeled rates (3 lbs/1000 cubic ft.).

Certain types of styrofoam trays appear to be more easily damaged with this chemical. Pay special attention to ALL label precautions related to safety.

**CHLORINE BLEACH** solutions have given a high level of control. Just dipping the trays in the solution and allowing them to dry is, not highly beneficial. We have found little benefit to using more than 10% solution. Without proper aeration and post-washes, salt residues can cause serious problems, especially with older trays that tend to soak up more material.

Bleaches work best when the trays are washed with soapy water, then dipped several times into clean 10% solution (1 gal/vgal water), followed by covering them with a tarp or plastic to keep them wet overnight (24-48 hrs) with the bleaching solution. Afterwards, the bleach solution should be washed from the trays with clean water or water plus a

Q-salt listed below, followed by aeration to eliminate the chlorine and salts. Worker safety issues are also important with bleach. It is important that the bleach solution remain below pH 6.5 and that new solutions be made up every 2 hrs. or whenever it becomes dirty, whichever comes first. Organic matter will remove the active ingredients quickly.

**Q-SALTS** (Quaternary ammonium chloride salts). These are marketed under such names as GreenShield, Phusan, and Prevent. In solutions containing 20% ammonium chloride, many growers are

using them, but the effects are not as positive as some believe, based on UK testing. The greatest benefit is in the final wash and on exposed surfaces in the greenhouse. In all UK tests, Q-salts have always provided some control, as compared to using soap washes only, but have always been inferior to any of the above mentioned methods.

**Bottom Line:** Remove as much soil from the trays by using soap and water or high pressure washes. Completely soak the trays in 10% bleach solution and cover with plastic for 24-48 hours,

followed by washing and ailing. Turn trays on their side for best air movement. Trays which are damaged allowing large amounts of last years soil media to remain in crevices are candidates for being disposed of. Sanitation is very important. As trays are used more, more disease problems occur.

For products with DST 4 meters, an annual calibration is recommended. Contact the Extension Office if you would like to check your inferters accuracy.



Ms. Larkey's morning, above, and afternoon, below, preschool classes from Mt. Vernon Elementary School were recently given a tour of the new Rockcastle County Extension Service facility.



Several youth from Brodhead are participating in the first session of 4-H Clothing projects taking place at Brodhead Elementary School. Front row, left to right, are: Rebekah Gevejon, John Mark Davis, Katrina Chasteen, Casey Hunt (volunteer assistant), Carri Hunt, and Samantha Bullen. Back row, volunteer Barbara Congleton, volunteer Loraine Robinson, Emily Whitaker, Destiny McDaniel, volunteer Carolyn Hunt, and volunteer Mary Ann Chasteen. Not pictured is Kayla Collins. Projects will also be held April 2-5 for an additional group of Brodhead Elementary School students.

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**Margaret Offutt**  
Property Valuation Administrator

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