

PROPAGATION MIX USING AN INCLINE MIXER

WAYNE WHIDDON

*Shelfer Nursery, Inc.
Route 3, Box 191
Havana, Florida 32333*

At Shelfer Nursery we propagate almost all of our own liners. In doing this we stick cuttings in everything from ground beds and metal trays to 2 $\frac{1}{4}$ -in. and 3 $\frac{1}{4}$ -in. Lario pots. We had what we thought was a good mixture of propagation soil, but we were not getting a consistent overall mix by using the front-end loader. After some shopping around and considerable thought we decided to buy a soil mixer from Ellis Trailers of Semmes, Alabama. The mixer was an incline mixer that mixed 4 cu. yds. per batch. The mixer has met our requirement for a consistent total mix at a price we could afford. First, I will give an overall view of the mixer and how it works for us. Then I will describe some of the advantages and disadvantages of the mixer.

Shelfer Nursery is a small container nursery of approximately 26 acres. We have 3500 ft² of greenhouse space, used for 3 $\frac{1}{4}$ -in. pots for azaleas and 2000 ft² of 2 $\frac{1}{4}$ -in. pots used for juniper propagation. The balance of the acreage is used for growing 1-, 2- and 3-gal. container ornamentals. We do all of our own propagation and had a good mix. However, it needed to be more uniform. We decided to put in the 4-cu. yd. mixer from Ellis Trailers and found it produces an excellent mix for both the small cups and the big trays. Even though we are a small nursery, the need for a good, consistent mix justified the purchase of a soil mixer.

Let me explain how the incline mixer works. The mixer has a bottom that is built on an incline. The chain is driven by a 7 $\frac{1}{2}$ h.p. three-phase electric motor, which, with the use of a gear reduction box, provides sufficient power. As the chain moves the mix up the incline, it begins to tumble back to the bottom in a continuous tumbling action. The door is at the top of the incline so that while the mixer is emptying, it continues to mix until all of the soil is out.

The incline mixer has many advantages. One major advantage to a small nursery is that it is affordable and has proven to be quite cost-effective. Due to the tumbling effect three 6-cu. ft. peat moss bales can be dumped directly into the mixer; it will break the moss up in 30 sec. without breaking it down.

The simplicity of the mixer is a big advantage. The chain is adjustable. There are only a few moving parts, and they are all easily replaceable. Most of the parts can be bought at any machine shop, and all replacement parts are in stock at Ellis Trailers.

The large door opening at the rear makes putting in the bales of peat moss easy. The bark and sand are put through the large top

opening. Since the mixer is a batch mixer, it is easy to change from one type of mix to another. The nice design of the door that lets the mix out is certainly an advantage. The large door hinges on the top axle and is opened easily with one handle. It allows the mixer to empty quickly, approximately 1½ min. The entire operation is fast and safe.

Even though the 4-cu. yd. incline mixer works well for us, I can still see a few disadvantages. The incline mixer is limited to mixing 4 cu. yds. at a time. For larger nurseries this might bring about a need for a continuous mixer or possibly two incline mixers, whichever would be the most cost-effective. The fertilizer and other chemicals have to be weighed and added to each batch and are not being constantly metered-in as in a continuous mixer. The more manual action required, the greater the chance for human error.

It would not be fair to discuss only the mixer since the manufacturer of the mixer also makes a flat filler that will fill trays and containers. Jim Scoggins of Wight Nurseries Division III has a flat filler in operation and reports that he can fill 950 trays per hour.

The mixer can also be mounted on an axle and towed to different potting operations on a nursery as the need arises. An incline conveyor is made that will take the mix as it is dumped out of the mixer and place it in a pile. When making two kinds of mix, it will pivot to store the different mixes in their respective storage locations. These are a few adaptations made for the mixer that might benefit your nursery.

At Shelfer Nursery we always look for ways to improve our propagation. We used a mixture of peat, perlite and sand that worked well, but needed a better way to make a consistent mix. After looking at soil mixers, we decided the 4 cu. yd. incline mixer made by Ellis Trailers was the best investment for our nursery. Both our propagation and our container operation have benefited from the improved consistency of the mix. In our opinion the incline mixer works very well and is worth the initial investment many times over.