

- A. The U.C. Soil specifications are the following:
 - 1. Soil must be uniform.
 - 2. Soil must be free of weeds and disease.
 - 3. Soil must be light and pliable.
 - 4. Soil's basic ingredients must be economically and readily obtainable.
 - 5. Soil must be free from salinity.
 - 6. Soil must be usable soon after mixing.
 - B. Sterilizing methods used by the Oki Nursery to fulfill the above specifications are as follows:
 - 1. Weed control — methyl bromide for rice hull.
 - 2. Composting — natural heating within the soil mass.
 - 3. Steam — liner mix and propagation media.
3. Factors of the mixing method utilized by Oki Nursery are as follows:
- A. *Ingredients*: 50 cubic yards of redwood sawdust treated with nitrogen, 43 cubic yards of rice hull, and 48 cubic yards of washed sand with recommended amount of fertilizers.
 - B. *Machinery*: Scoop loading tractors, rotary mixer and screener, and 180° side-to-side swinging conveyer.
 - C. *Personnel*: One reliable operator.
4. The preparation of the Liner Mix using U.C. System:
- A. *Ingredients*: $\frac{1}{3}$ cubic yard fine sand, $\frac{1}{3}$ cubic yard fine fir bark, $\frac{1}{3}$ cubic yard ground sphagnum peat moss and recommended amounts of fertilizers.
 - B. *Sterilization*: Steam under canvas cover at 140° F. for 30 minutes. Steam is fast, retains beneficial bacteria, and is a by-product of steam energy.

**SPECIALIZED EQUIPMENT: CANNING,
MATERIAL HANDLING SYSTEMS**

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Most of us build or purchase machinery for easier and quicker handling, and for labor saving. We all make mistakes in purchasing special equipment because of the expense involved. A less expensive model will usually be made with cheaper parts.

We here at our nursery, in evaluating equipment, consider life time, labor saved, and taxes. It's a shame our industry isn't large enough for machine manufacturers to build specialized equipment. Most all of our equipment is built here in our shops. All parts we use are new and are readily available at any dealer.

First, I'd like everyone to observe the two-row Pneumatic Canning Machine. At this rate of speed, this crew will plant over 17,000 cans in an eight hour day. Except for the hoppers and pot dies, the parts for this whole machine may be obtained

through any machine shop supply house. The parts that get the most wear on this machine are the chains and sprockets.

This truck was built in our shop. It has a Chevy II, four cylinder motor with an automatic transmission, Ford front end, and a Jeep rear end.

This spray rig has a Bean pump, a Clark Fork lift, for different heights, and a Bean blower. All the action is controlled from the drivers seat.

We have found air cleaners to be an important factor in the maintenance costs of our gas engines. We have installed paper air filters in most all of our equipment. We also are in the process of changing all of our oil filters to toilet paper filters..

When over hauling the gas engines in our yard equipment, we install cheap cast iron rings.

For those who are planning on building equipment, make sure the parts are available at your local source of supply. Don't use war surplus parts because it's going to cost money when it's time to replace them — machinery won't last forever.

B-I-F FERTILIZER METERING SYSTEM

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Since Oki Nursery's fertility program is based on the constant feed system, a more dependable fertilizer metering system was needed. The source of water being from a well we have faced a constant problem of sand in our water raising havoc with the positive metering system as used by many injector pumps.

We at Oki Nursery under the advise and counsel of Mr. Fred Petersen of Soil and Plant Laboratories have installed the BIF metering system. This apparatus is a commonly used technical equipment used by many water districts throughout the country to chlorinate drinking water. All component units were of a stock shelf item and only fertilizer was used instead of the chlorinating reagent.

These are the 3 basic pieces of equipment necessary.

- a. The transmitter which responds to a differential pressure created by a primary flow element of the "DALL" flow tube and converts the pressure differential into time impulses proportionate to flow accuracy is $\pm 0.1\%$ of maximum flow.
- b. The Dall flow tube is a differential producing primary flow metering element to accurately measure water flow.
- c. The 1210-05 Duplex Chem-O-Feeder is a duplex head chemical proportioning diaphragm pump of the positive displacement type. It is equipped with a positive dial stroke adjustment on each head and the repeatability of setting is assured by micrometer screw adjustments.