

Packaging Nursery Stock in Illinois

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INTRODUCTION.

1. Packaging is an important final step in nursery operation. Proper packaging helps insure that the seedlings will be established successfully.
2. The greatest satisfaction comes, not from growing good stock, but from achieving the desired results of good survival and growth in the field.
3. We are too often frustrated by circumstances seemingly beyond our control. In Illinois we have been concerned with packaging so that stock is delivered in the best possible condition. However, practical considerations must also be taken into account.

PACKAGING.

- 1, Packaging methods are influenced by circumstances, In the 1930's labor was plentiful. Much stock was trucked directly to planting sites or camps Heavy wooden crates of seedlings weighing several hundred pounds were loaded on trucks with a chain hoist.
- 2, The "Forest Service" bale replaced the crates . Bales were necessary for smaller shipments and for Railway Express delivery.
3. Prior to 1943 Illinois used burlap in a trough filled with seedlings The ends of the burlap were twisted around a square stick. Socket wrenches were used to twist the stick and tighten the burlap. The burlap bales were fastened with baler wire.

BALER.

The Illinois tree baler was origina ed by Ralph Fisher during World War II because of the scarcity of burlap. Basket veneer was available in Southern Illinois so he built a loom and wove mats with the strips of basket veneer. The veneer could not be wrapped around a stick like burlap so he designed a tree baler with a wide belt in a trough. The belt could be tightened to form the bales.

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The belt was tightened by rolling one end of it up on a drum powered by a foot pedal. Les Kahler modified the baler by replacing the foot pedal with an electric motor. I eliminated the winch drum. I tighten the belt with an overhead electric hoist. The hoist can also be used to remove the bales and put them on push carts. This makes it easy for 1 man or woman to operate the baler. With 8 balers that we have we can make 8 different bundles simultaneously. Each baler can make 40 to 50 bundles per day.

WRAPPERS.

The woven wood veneer mats make good rigid bundles that withstood express and truck handling well. Weaving them was a good winter project. However, there were some problems . A new wrapping material was sought. We found that a box factory could staple thin slats of wood to wires to make mats of various lengths The ends of the wires could be twisted to fasten the bales . These mats cost up to 40 each.

We have considered the use of heavy paper wrappers, but find that the wooden wrapper is preferable.

MATERIAL.

I started testing non-woven fabric as a substitute for sphagnum moss in 1963. I first used it as a liner inside the wooden wrapper. Plastic coated paper was used between the wrapper and the fabric to prevent drying. In 1969 I got the manufacturer to laminate 3/4 mil poly to one side of the fabric and die cut pieces 20 x 30 and 20 x 36 inches This is used as a moisture holding liner in the bale. It costs about 25 per bale.

I also had the unlaminated fabric die cut in 18 x 20 inch pieces. These pieces cost 9 1/2 each and are used in place of moss between the layers of trees in the bale. The fabric is sprayed with water after it is put in the baler. I found that the substitution of fabric for moss reduced the weight of an average bale by about 25%. We can often pack 1000 trees in a bale weighing less than 50 pounds, which is the UPS weight limit.

BAGS.

When UPS shipment began, delivery became faster and weight became more of a factor due to the UPS limit of 50 lbs . per bale and 100 lbs . per customer per day. I started using multiwall kraft bags with poly bag liners in 1964. However, we got a few reports of poor conifer survival which might be due to heating of the stock in the bags. We do not have control over handling and exposure of the bagged stock.

Since then I have used bags for walnut seedlings which were difficult to pack in standard bales because of the large tap roots. The seedlings are jelly rolled in dry fabric, dipped, drained and placed in the bags which are not tightly sealed. These bags of hardwoods have been stored over winter in cold storage with excellent results for several years

The bags that we use are 17 x 7x 38 and 20 x 7 x 38, 3 ply with a 1 1/2 mil poly liner inserted and cuffed. These cost over 25 each. Less expensive bags are available but we are reluctant to use them, especially where long storage is contemplated.

In recent years we have started distributing standard packets of mixed pines, and pines and hardwoods, containing 125 to 500 plants. Each variety is root wrapped in fabric and placed in a bag which has a plastic bag liner. The smaller packets go in a 18 1/2 by 33 inch or longer bag. The plastic liner is not tightly sealed and the tops of hardwoods may extend above the top of the bag which is stapled shut around the seedlings. I feel that some aeration of the bags is desirable. However, the plastic bag liner affords positive protection against drying and leakage.

We are testing poly coated kraft bags , especially for spring packing.

I would like more information. on bag packing practices and instructions for customers.