



The tree spade consists of 4 hydraulically operated steel spades mounted within a frame. The spades can be pushed into the ground under the roots to form a variety of ball sizes. When the 4 converging blades meet, the tree and ball are lifted and are ready for transplanting. The spade at the Francis Marion Orchard is mounted on the rear of a rubber-tired tractor and can dig a maximum ball size of 30 inches. Smaller ball sizes may be dug by hydraulically lifting the spade frame before digging.



Figure 1.--A 2 year old longleaf graft being transplanted with the tree spade.

Once the tree is lifted it can either be transported to the new location in the spade or transferred to a container. Many different types of containers are available. Wooden wire-bound boxes and boxes made of heavy corrugated organic material are made to receive the cone shaped ball lifted by the spade. Contour formed burlap bags with aluminum wire baskets are available. Home-made containers can be fashioned out of woven wire or single strand wire with a burlap liner. Home-made containers are cheaper and are satisfactory where rehandling and holding in a staging area are held to a minimum. Where the grafts can be transported to the new planting site in the spade, costs of labor, equipment, and materials are held to a minimum. An operator and helper can move 45-55 plants per day at the Francis Marion Orchard where distances average .25 to .5 mile. Longer moving distances would require transfer to containers and hauling by truck or trailer. Ball size and weight dictate some sort of mechanical lifting device where containers are used.

