

Root Control Bags – the Roots Within

*Dr. Edward G. Corbett
Associate Professor, Ornamental Horticulture
Department of Plant Science
University of Connecticut
1376 Storrs Rd.
Storrs, CT 06269-4067*

*This article is re-printed from **The CONNECTICUT NURSERY NEWSLETTER, Volume 2, Number 4**, August 1990

In an earlier issue of the Connecticut Nursery Newsletter there was an introduction to the Control Field Grow Contain discussing the uses and potentials of the bag for field production in Connecticut. This is a follow up on that article to discuss the root system produced within the bag.

The theory behind the development of the bag was that, while the fine roots would penetrate the sides of the bag, most of these roots coming through the sides would eventually be girdled as they increased in diameter during the growing process. This girdling would result in branching of the girdled roots inside the field grow container thus producing a mass of roots inside the bag. It has been noted that in most cases the diameter of roots that penetrate the bag seldom exceeds the thickness of a pencil.

To test the theory several plants of *Thuja occidentalis* (Eastern Arborvitae) and several plants of *Spiraea nipponica* ‘Snowmound’ were lifted from the field where they had been growing, in the bags, for three years and two years respectively. The bags were removed and the soil was washed from the roots to expose the extent of the root system. The accompanying photographs in Figures 1 and 2 show the results.

Figure 1A is a plant of *Thuja occidentalis* grown in a 16 inch bag. You can readily see that a fairly large number of small roots are through the bag. These roots will be lost in removing the bag and they do make it somewhat difficult to tear the bag off. Figure 1B show the washed root system of the same plant. It is a dense mass of roots including many feeder roots (even though the washing process must have removed many of the finer roots). No attempt was made to measure the extent of the root system either outside the bag or confined within the bag. However, the root system within the bag was so dense that it was virtually impossible to remove all the soil from the root mass. A close inspection of the root ball showed no evidence of potentially girdling roots.

Figure 2A shows the root ball of a three year old *Spiraea nipponica* ‘Snowmound’ with the bag still on. The plant had been growing in the bag for two years. A number of larger roots can be seen on the outside of the bag. It is obvious from this that not all of the roots are girdled during the growing process. These roots did not appreciable alter the time it took to lift the bags from the ground.

Figure 2B shows the washed root ball. Again there is a dense mass of roots with no evidence of potentially girdling roots. With such a mass of roots the plants should establish rapidly in the landscape.

It has been reported by Watson and Himerlick (1982) that non-root pruned nursery stock dug with tree spades according to A. A. N. standards retained only 2 to 8% of their roots. In contrast, Root Control, Inc. claims that approximately 80% of root system is retained when the bag is harvested.

We are looking at several other aspects of growing plants in the root control bags and will have reports as additional information is developed.

Literature Cited

Watson, Gary W. and E.B. Himerlick, 1982. Root regeneration of transplanted trees. *J. Arboriculture* 8(12): 305-310.