Myerscough College Arboriculture
Thesis by Simon Stokes

[Superoots Fielder formerly known as Root Control Bags (RCBs).]

A comparative study between the stock grown by conventional nursery means and tree stock grown in Root Control Bags to determine the possible merits of using the **Root Control Bag (**RCB) system.

Summary: The objective of this thesis was to investigate the Root Control Bag being marketed by the Caledonian Tree Company. The system of growing tree stock in the Root Control Bag is claimed to produce a tree with a dense fibrous root system and a high root:shoot ratio. This claim means that nursery trees produced by this method should have a greatly enhanced chance of survival in the landscape. The production of such trees could have great significance in the Arboricultural industry.

To test these claims, an ongoing trail of 200 trees was set up. After two years of growth, an interim comparison of the RCB system and bare root stock system was carried out. *The results thus far, agree with the claim that an enhanced rootball is formed in the RCB system.* Future work is needed to verify this and to establish whether establishment rates are improved by the RCB system.

The report looks at traditional nursery methods of all types to produce trees for transplant; at what previous related research papers have established; and at the commercial experience of Root Control Bags to date; and the Myerscough College trial, supervised by Jeff Hodson, Horticultural Lecturer. The college trial compared a range of species, grown bare root in the open ground and in RCBs. The trial would also assess the performance of the trees after transplant into the landscape, to ascertain the long-term effects of the production methods. 200 trees were selected for the trial. In order to evaluate the RCB, girth increases and direct comparisons of the root systems were made.

Conclusion: It would appear from the early results gained in this trial, that several aspects of the claims by the Caledonian Tree Company regarding the Root Control Bags (RCBs) have been verified. The crown growth and development, together with trunk girth increase, was found to be very similar for both the RCB and the bare root grown trees.

This supports the results from Ronneby Tree Farms, whose trials showed the same similarity of top development between RCBs and control trees. Below ground the root system appeared to be restricted in a uniform fashion and to a uniform size as predicted by the Caledonian Tree Company.
In all species examined, the **RCB** rootball was found to be more dense and fibrous, by approximately 100% in many cases, in comparison to the control rootballs. It would appear then, that this method of tree production directly increases the level of root branching within the area of the future rootball. This increased root:shoot ratio should limit the degree to which the tree is predisposed to drought stress, due to the increased amount of absorptive root area available to the transplanted tree.

The root nodules formed by these restrictions were found to contain high levels of starch. It could then be assumed, based on existing literature, that this more fibrous starch rich rootball would result in a more successful establishment rate. This could occur due to the large store of carbohydrates present giving the trees system the initial impetus to establish a new root system with which it exploit the surrounding soil medium, whereas traditional bare root trees lack this large store of resources.

The increased root:shoot ratio will also aid in establishment, as it is more true to the trees natural state. The initial views of Mr Nick Bentley, and the professional commitment of companies such as Coles Nurseries, would support such and assumption, in that the system is already producing high quality stock, all of which is being successfully sold and grown on outside the nursery. Experiments by Ronneby Tree Farms also support this assumption.

In my opinion, the RCB system of tree production has been successful in that a better rootball has been produced, and that this root ball will likely enhance the chance of successful tree establishment in the urban landscape, assuming that normal site preparations are still carried out.

FULL DETAILS OF THE RESULTS OF THE TRIAL, INCLUDING PHOTOGRAPHS, CAN BE OBTAINED FROM:

JEFF HODSON
MYERSCOUGH COLLEGE,
BILSBORROW,
PRESTON, PR3 0RY.
TEL: 01995 640611,
FAX: 01995 640842.