

# Why plant Sitka spruce cuttings?



*Rooting beds in the Aughrim Vegetative Propagation Facility.*

For a number of years you will have undoubtedly heard of the benefits of planting genetically improved Sitka spruce. Promises have been made of improved growth rate, form and wood quality in planting stock but, apart from research trials, this material has remained unavailable. This is now beginning to change.

This genetically improved material is derived from Coillte's own Sitka spruce tree improvement programme which began in the early 1970s. Based on research trial results, genetically improved material is expected to produce on average a 15% increase in stem volume, which on a, Yield Class 14 site is equivalent to an increase of one full Yield Class. Additional improvements in stem form and wood quality are expected but have yet to be documented.

Unfortunately the amount of this material remains small and the only way to overcome this is through the use of rooted cuttings. Basically 10 cm branch cuttings are collected from genetically improved stock plants in early March. These are inserted into a rooting medium and placed in a plastic tunnel under a misting system. After 4-5 months the cuttings have rooted and are lined out in a conventional transplant bed where they spend the next 1 1/2 years

and are treated exactly as seedling transplants.

Cuttings are very similar in appearance to seedlings~ and it is difficult to distinguish the two; cuttings tend to have slightly fewer branches and a more fibrous root system. Reports from similar rooted cutting programmes in Scandinavia and the UK state that

cuttings have a larger root collar diameter than seedlings and thus are more resistant to weevil attack. This remains to be demonstrated under our conditions.

Because of the increased labour required in the production of rooted cuttings (collection and insertion), their cost will be higher than conventional seedlings. However, this should be offset by the increased wood production and quality of the cuttings. One way to reduce the plant costs would be to plant mixtures of unimproved seedlings and cuttings in a random mixture. The cuttings which will out perform the seedlings should be retained as the final crop trees and the seedlings should be removed in thinnings. As the increased wood production is expressed as a percentage increase in wood volume, planting genetically improved material on the best sites will result in the greatest increase in wood volume.

Over ~ the next several years the Vegetative Propagation Unit of Nurseries SBU at Aughrim will be producing genetically improved rooted cuttings on a larger scale for commercial planting so cuttings will become more and more a part of improving the productivity and quality of Coillte's forest estate.

**Further information: David Thompson, Tree Improvement**



*Rooted cuttings ready for lining out.*