

# PINE BREEDING PLAN

By CLAYTON SANDERS

**MOST** Australian States and New Zealand have become self-sufficient in radiata seed production by planting seed orchards.

These orchards, which contain grafted trees that have evolved through intensive tree-breeding programmes, are managed solely for the collection of their cones.

The cones contain superior seed for plantation use.

CALM's West Manjimup seed orchard satisfies all our radiata seed needs.

It is currently being expanded with grafts of improved genetic material, reflecting the advances which have been made in our tree breeding programme.

Tree breeding has been actively pursued in WA since 1960. Most of the early effort was directed toward *Pinus*

*pinaster* and large gains in growth rate and tree form were achieved.

The focus is now on improving growth rate, tree form and disease tolerance of *Pinus radiata*.

A genetic gains trial, using different seedlots, is one way of gauging tree improvement.

Early genetic gain trials of *radiata* were planted at Kirup and Grimwade in 1973 and these have shown modest gains in growth rate and tree form.

Since these trials were established, *Pinus radiata* has improved considerably by breeding.

New genetic gain trials were planned with the exchange of orchard seedlots between Australia, New Zealand and South Africa to monitor the performance of the improved breed in each of these areas.

Wanneroo Research established these trials in July — one on a dieback-free site in the Kirup dis-

trict and another on a dieback-infested site in the Busselton district.

The Busselton crew which planted the trials had to plant on a precise grid, spacing more than 9000 seedlings in large treatment plots.

The orchard seedlots being studied include the range of New Zealand breeds as well as current seedlots from Australian and South African orchards and the special WA breed which has tolerance to *Phy-*

*tophthora cinnamomi*.

An unselected plantation seedlot from Nanup plantations was also included in the test to highlight the improvement made since the species was introduced to Australia.



Still managing to smile after the Kirup planting trial are (left to right) Jeff Johnstone, John Bopp, Hap Hoes, Les Baldwin, Rob Crabb, Fred Cotton, George Calvert, Tom Gillard, Alan McKittrich, Fred Blurton, and Lindsay Belotti.