

PLANTING MACHINES : FACTS AND FIGURES

By P. D. Staley

Mechanical pine planting was first carried out in this State at Gnangara in 1950. Since then there have been continual modifications and improvements to the machines, which have resulted in a very high standard of planting at greatly reduced cost per acre.

The original Lowther Tree - Planting Machines, as imported from the U.S.A. were unsuitable for planting in this State, due mainly to the failure of the rear wheels to revolve properly in the deep loose sand. Modifications were made to the frames of the machines, enabling larger rear wheels to be fitted almost vertically, with only a slight lean outwards at the top. This enabled the wheels to revolve much more freely and planting was greatly improved. Later the performance was further improved by substituting 15" x 5.90" tyres for the 15" x 4.00" tyres.

Other early modifications to the original machine included -

1. Addition of a fixed depth control.
2. Improved arrangement of seating and foot plates.
3. Addition of a large capacity plant box.

Originally the machines were built with all axles rigidly fitted to frames, without a turntable at the front. This meant that considerable difficulty was experienced when turning, either around stumps or logs, or at the end of the lead as the machines had to be literally dragged around. This was overcome by removing the front wheels and fitting a large universal joint to the front of the machine and attached directly on to the tractor drawbar. It was found that by using this method it was possible to extend the drawbar of the tractor and attach two machines at the required spacing and that two machines could be handled comfortably by a large rubber tyred tractor. It is the practice in the Wanneroo Division to use planting machines in pairs in banksia country and a single machine attached to a smaller tractor where stumps are more numerous.

Using machines in pairs, a five man gang, which includes the tractor driver, can plant an average of 26 to 28 acres a day. Up to 32 acres in one day have been planted under good conditions.

Using a small tractor, with a single machine and a three man gang, results are equally favourable. In fact there are less stoppages with the single machine and an average of 14 to 16 acres per day is obtained.

Costs for planting are kept to a minimum by using planting machines and over the last three planting seasons for Gngangara Block over 1,000 acres have been planted at a spacing of 8' x 8' and 9' x 9' for an average cost of just under £1.10. 0. per acre. This above cost includes all wages and machine costs, plus the cost of all modifications to planting machines for the 1963 season.

For the Pinjar Block where Tuart and Jarrah stumps are fairly numerous, during the three seasons to 1962, 830 acres were planted at the slightly higher cost of £1.12.0. per acre, this cost also including all machine costs.

The rate at which it is possible to plant with these machines greatly reduces labour problems during the planting season. No recruitment of casual labour is required even for large planting programmes. Small teams of experienced men on machines do the work of large gangs of hand planters. Machine planting is reliable and the amount of supervision required is consequently greatly reduced.

The use of planting machines in the Wanneroo Division has considerably shortened the time taken to complete the planting programmes and this is important, enabling planting to be carried out under the most favourable conditions. In the Wanneroo Division where annual rainfall for the last few seasons up to 1963 has averaged only about 31", the wet season is short and little rain falls between the end of August and April or May the following year. Planting commences as soon as the ground is thoroughly wet, early in June and is usually completed early in July.

Results speak for themselves and the value of planting machines is demonstrated by the fact that planting deaths in Pinus pinaster at Gngangara in the last three years have not exceeded six per cent.

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