

CHEMICAL CONTROL OF *EUCALYPTUS POPULNEA* - EFFECT OF TIME
DELAY BETWEEN TREATMENT AND FELLING

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Experimental evidence in recent years has shown that mature trees of *Eucalyptus populnea* (bimble or poplar box) can be killed by basal injections of some hormone-type herbicides when the trees are left undisturbed after application of the chemicals.

Since injection prior to felling is a practical means of avoiding the difficulty of controlling the regeneration from broken stumps that inevitably occurs after mechanical pulling or bulldozing, it is of some interest to know the minimum time that must elapse between injection and stem breakage if resprouting is to be minimized. At Cecil Plains, 130 miles north-west of Brisbane, poplar box trees growing on a shallow acid clay loam were injected and afterwards cut down at various time intervals to simulate pulling after chemical treatment.

Trees were basally injected with a Marino Tree injector fitted with a curved cutting bit and calibrated to deliver 2 cc of 1.0% picloram as Tordon 50-D per injection. Only single stemmed trees, with a mean basal circumference of 22 in. (56 cm), were used and the injections were placed to leave 4 in. of undisturbed bark between the edges of successive cuts. The number of trees treated was sufficient to permit seven felling intervals, ranging from 1 to 64 weeks after injection and four replications each of ten trees per treatment. At each felling time, ten treated trees were left undisturbed and ten treated and ten untreated trees in each replicate were felled with a chain saw at approximately 2 ft 6 in. (76 cm) from ground level.

Cutting trees with a chain saw differs from mechanical pulling in that there is no disturbance of the root system or lignotuber, but it was considered that the bias, if any, would be in favour of tree regeneration rather than of treatment.

Plant counts taken 27 months after chemical treatment show a high percentage kill for all treated trees, both felled and unfelled. Kills ranged from 87.5% for trees cut 1 week after treatment to 95-100% for the other cutting times. Of the treated uncut trees 98% were killed, but only an occasional tree of the untreated cut trees failed to regenerate by stem or lignotuber sprouts. At the time of final treatment assessment, most of the stumps of the chemically untreated but cut trees had vigorous new shoots, 6-10 ft (175-300 cm) tall.

The high percentage kills obtained on the trees cut only 1 week after chemical application suggests that picloram is rapidly translocated to all sections of the plant. This mobility could be an important factor in land clearing.