CONTROL OF EUCALYPTUS SPECIES BY STEM INJECTION TECHNIQUES WITH TORDON HERBICIDES

A.R. Murphy
Dow Chemical (Aust.) Ltd

Tordon herbicides (containing picloram and 2,4-D or 2,4,5-T amines in a 1:4 ratio respectively) for stem injection, are currently registered in all states of Australia. General recommendations are equivalent to 1-2 cc of an aqueous solution of 2% picloram per injection pocket. Injections are spaced every 6 in. (15.24 cm) of basal circumference leaving undisturbed sapwood between pockets. Research on eucalypts since 1963, and observations of commercial work since 1966, enable the following conclusions to be made. These conclusions are general and may be controversial, but if disagreement is slight, this is some measure of progress.

1. Quantity of active herbicide absorbed and transported by the tree is the most important parameter in deciding successful control. Increased dosage can counteract seasonal variation in susceptibility. Increased effect may be expected and results will not deteriorate with increased rate of application. The quality of labour and the application equipment have an important influence on the administration of active herbicides. Application errors in general outweigh any other single influence. Equipment should be selected for its efficiency to treat a particular situation with a minimum of error and suitability to labour.

2. Height of application above ground level is not of importance from experimental results. Height does influence the field calculation of dose per tree, which is determined by basal circumference; in single stem trees this is always greater than the girth at waist height. To ensure the correct dose with present recommendations, injection pockets are made closer when treating high. Correct equipment will ensure that pockets will not overlap in the sapwood, preventing poor results. Multi-stem trees may be larger waist high, but application may be easier around the base.

Basal application, despite promotion, has not been as acceptable commercially as waist high. This is due mainly to the difficulty of (a) penetrating thick bark with available equipment; (b) walking around smaller trees which can be injected easier with waist high equipment, and (c) using a basal injection on slopes.

3. Eucalyptus species. The susceptibility between eucalyptus species to tordon herbicides at the use rates referred to, is

not as variable as one might consider. This applies generally to different species in the same location, or particular species in different locations. Some exceptions to this are *Eucalyptus maculata* and the bloodwood group of eucalyptus species (e.g. *E. gummifera*) in some areas. Extrusion of kinos is a notable factor with these trees. Experiments are in progress to determine variability.

4. Tree size. Experimental and commercial results on many eucalyptus species indicate that large trees are harder to kill than small trees when calculating dosage from basal area.

The role of tordon herbicides for control of eucalyptus in some grazing areas is well established. The level of control, rapid pasture response and the rate of return on investment, makes tordon herbicides valuable tools in grazing management. The writer forecasts, with improvement in the method of injection, these chemicals will be used prior to bulldozing, to reduce eucalyptus regrowth competition and costs in softwood forests, and for more economical control of competition from co-dominant trees in hardwood forests.

CONTROL OF EUCALYPTUS REGROWTH WITH PICLORAM-BASED HERBICIDES

B.L. Campbell
Dow Chemical (Aust.) Ltd

Foliar spray, injection, cut stump, granule, and basal bark application techniques, using the herbicide picloram, have been evaluated for the control of eucalyptus regrowth. The range of picloram formulations, i.e. granules, oil soluble, and water soluble, allow versatility in application technique and all have some role to play in a well-planned control programme.

Successful control of regrowth with picloram depends on the selection of the appropriate application technique related to stage of growth, eucalypt species, and environment. Improper placement of chemical, e.g. basal bark spray at only one side of the stem, results in poor performance. Such placement may be a result of poor selection of the proper application technique for a given situation.

An acceptable control programme for a specific plant community must consider a combination of the correct herbicide formulation, method of application, and ultimate cost. It must also consider