



Use of Chemicals in Plantation Forestry

(IFA Forestry Policy Statement No. 2.5)

The issue

The use of chemicals (mainly fertilizers, herbicides and insecticides) is accepted practice at various stages in the establishment and growth of plantation forests. Concerns are often raised about the residual nature of some chemicals and the risk of drift of chemicals outside the target areas.

The continued use of chemicals, often essential for economic timber production, depends on responsible use and adoption of a “best available practice” approach by plantation growers.

Background

Fertilisers, in both solid and liquid forms, have been used in the growth of plantations in Australia for many decades. Fertilisers are used to correct on-site soil nutrient deficiencies, to enhance growth in young trees, or to increase the growth and value of plantations in the mid- to latter- stages of a rotation. Products containing principally phosphorous, nitrogen, and potassium, together with calcium, sulphur, and a range of trace elements are used.

Herbicides have also been used in plantation forestry in Australia for many decades to control a wide range of weeds. They are used primarily to control competing growth during plantation establishment. This extends from control of annual grasses to perennials and woody weeds. Weed control is often critical to the economic success of a plantation. Other use of herbicides in plantation management is for weed control to provide access, fire protection, fuel reduction, and where control of proclaimed noxious and environmental weeds is necessary.

Insecticide use in plantations is currently limited to particular needs associated with specific insect outbreaks of significance and varies with plantation type, location and season. Native tree species in plantations have proved to be more vulnerable to attack by indigenous insects than plantations of exotic softwoods. Continued judicious use of insecticides in the context of integrated pest management is seen as a necessary option in plantation management.

Use of *other pesticides and chemicals* (eg fungicides, nematicides, poisons, fire fighting chemicals etc) ranges from treatment of sporadic problem organisms in plantations, the tree nursery sector of the industry, use in specific locations where vertebrate pest control may be necessary, to more regular use for management and production purposes.

A range of chemicals is available within each of these categories. The type of chemical chosen for application depends on its suitability to conditions, the method of application, its cost and purpose. The chemicals used and their methods of application are required to meet standards imposed by Forest Practices Codes and other guidelines approved by relevant government health and environmental authorities.

Application of the chemicals may be through aerial spraying, or ground based methods. Because of the extent of plantations, aerial spraying is often the most cost effective method of application of chemicals. This technique is often perceived as dangerous by the community due to concerns about residues in soils and the perceived risk of drift of chemicals outside the target areas, particularly in streams. However, strict environmental standards (including the use of buffer zones) can be applied to ensure that chemicals are accurately applied and remain within the intended application zones.

Chemical application techniques in forestry are constantly being refined. Sophisticated application technology (including microneaire nozzles) is used to control herbicide droplet size and minimize drift.

The use of chemicals is being minimised with broadcast application techniques often being replaced by strip or spot spraying and the use of granular herbicides. No spray zones or buffers adjacent to streams and water bodies are routinely used as important measures to reduce unintended off site

contamination. The size of no spray zones and widths of buffers depends on the nature of the chemical, the manufacturer's recommendations, the environmental regulation regime and the method of application.

Policy

The Institute of Foresters of Australia (IFA) advocates responsible and judicious use of approved fertilisers, herbicides, insecticides and other chemicals in plantation management, together with thorough planning, application and monitoring procedures and appropriate controls to minimise the risk of off-site contamination.

The IFA considers that:

- the use of chemicals in plantation management should comply with all relevant legislation and Codes of Practice and adopt best practice principles to avoid adverse environmental impacts and impacting on long term sustainable land use;
- chemical application techniques should be appropriate to the circumstances, take account of community views, protect water quality and environmental values and minimize off site movement of chemicals;
- the use of chemicals in plantation management should be minimised consistent with the need to achieve a balance between economic, environmental and social outcomes.

The IFA supports and encourages:

- an integrated approach to all weed and pest management situations with a view to minimising the use of artificial chemical compounds;
- ongoing research and development into the use of chemicals and alternative control measures in the plantation forestry sector.

Further Information

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Commonwealth of Australia (1992) National Forest Policy Statement

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