

ENVIRONMENTAL ASPECTS OF SILVICULTURE (Ch.6)

WEED CONTROL PLANTED COMPARTMENTS (p79)

Weed control programmes should reduce weed competition with young trees, whilst having minimal impact on the environment (soil, water, biodiversity) and human health. For long term site sustainability to be achieved, and chemical usage to be reduced, it is necessary to integrate various acceptable methods of weed control that includes chemical, physical, biological and cultural methods.

Proactive measures:

Mulches are effective at excluding light, providing a physical barrier and have a positive effect on soil moisture and temperature.

Post harvest residue retention has been shown to reduce weed occurrence.

Inter-crop weed growth can have an important soil protective effect on sensitive sites.

Timing is the most critical aspect of weed control. Early stage weed infestations are easiest to control, less labour and chemically intensive and minimises weed competition. Woody weeds should be targeted first.

Commercial weeding

Prevent weed competition during the first two years post-planting, which is the biggest contributor to the reduction in sapling growth and ultimate yield. Post-canopy closure weed control is done for safety, environmental or fire protection reasons and should be part of a management and monitoring plan.

- First two years post planting, a clean compartment is particularly important.
- Tree lines should be kept free of weeds until canopy closure.
- Weed growth should not touch the tree.

NB: In stands with a high tree mortality, the effect of canopy closure and complete shading is lost. Thus, there is the potential to develop significant understory vegetation, which will compete for light, water and nutrients.

Weeds

A weed is a plant in the wrong place at the wrong time. Most of them are alien species that arrived in the country deliberately as an attractive exotic garden plant or brought in by accident. They are aggressive competitors, competing for water, light and nutrients, spread easily and difficult to control. Characteristically, they are erect and herbaceous or spreading and flat growing herbs and creepers. They normally thrive in disturbed soils such as is found in agricultural fields and similar sites.

Manual Weeding

- Hoeing, slashing and hand-pulling weeds.
- Normally restricted to the tree line, using ring and line weeding, where 1.2m diameter ring or channel either side of the tree line is weeded.

Disadvantages

- Labour intensive and time consuming.
- Promotes further soil disturbance and thus weed infestation.

Mechanical Weeding

- Limited by access to the compartment and slope
- Tractor drawn implement
- Cuts down or incorporates vegetation into the soil

Disadvantages

- Potential to damage the tree rooting system.
- Soil compaction, disturbance and reduced carbon content.
- Promotes further soil disturbance and thus weed infestation.

Benefits of weed control

1. Reduction in seedling mortality.
2. Faster canopy closure.
3. Better uniformity of tree growth.
4. Improved yields.
5. Reduction in fire hazard.
6. Managing the spread of weed seeds in the plantation and into neighbouring properties.

Chemical Weeding (consult the TIPWG APL)

- Allows for large areas to be managed rapidly.
- Must adhere to Best Operating Practices and label specifications.
- Must adhere to the use of shields or low drift nozzles to minimise harm from spray drift.
- Must be done when weeds are small to reduce the risk of spray drift and sapling scorching.

Chemical scorching impacts seedling growth and yield