



Information Sheet

10. WEEDS

10.3 Alien plant control - legislation and guidelines for control

LEGISLATION

The Conservation of Agricultural Resources Act (Act 43 of 1983), was amended during 2001. Alien plants now fall into three categories, which are described in a handbook by Henderson (2001). The term 'control' means to combat Category 1, 2 and 3 plants by using the prescribed methods to the extent necessary to prevent or contain the occurrence, establishment, growth, multiplication, propagation, regeneration and spreading of such plants.

Category 1: Declared weeds

Category 1 plants are prohibited on any land or water surface in South Africa. They must be controlled, or eradicated where possible, except in biological control reserves. These reserves are areas designated by the Directorate of Agricultural Land Resource Management (DLRM) in terms of the regulations for the breeding of biological control agents.

Category 2: Declared invader plants

Category 2 plants are allowed only in demarcated areas under controlled conditions. A demarcated area is an area of land approved by the DLRM for the occurrence, establishment and maintenance of alien plants in this category. The import of propagative material and trading of this category of alien plants is allowed only by permit holders. Permits are obtained from the DLRM. Category 2 plants growing outside the demarcated areas must be controlled or eradicated where possible, except in biological control reserves. Demarcated areas are prohibited within 30 m of the 1-in-50 year floodline of watercourses or wetlands unless authorisation is obtained from the DLRM.

Category 3: Declared invader plants

Ornamental plants are included in this category. No further plantings of this category of plants are allowed, except with special permission from the DLRM. Trade of propagative material is prohibited. Existing plants may remain *in situ* but must be prevented from spreading. Category 3 plants are prohibited near watercourses (refer to Category 2 above).

Most Category 1 plants found in the industry are alien species that have escaped and are posing a serious threat to the environment. Growers are obliged by law to control plants in Categories 1 and 2. There has been little law enforcement, but it could increase in the future as these species become more troublesome. Growers are encouraged to introduce control measures early to reduce costs and before legislation is enforced. Control of alien species is a matter of priorities and commitment.

For resource allocation to high priority areas refer also to Information Sheet 10.7, Alien plant control methods.



Lantana is toxic to livestock.

CATEGORIES OF ALIEN PLANTS

The invader plants most commonly occurring in the sugar industry are listed below. Also listed are those that have begun to spread or might spread in the near future.

| DECLARED WEEDS – CATEGORY 1 | |
|--|-----------------------------------|
| Common name | Botanical name |
| Triffid weed, Chromolaena | <i>Chromolaena odorata</i> |
| Lantana | <i>Lantana camara</i> |
| Pereskia, Barbados gooseberry | <i>Pereskia aculeata</i> |
| Bugweed | <i>Solanum mauritianum</i> |
| American bramble | <i>Rubus cuneifolius</i> |
| Red sesbania | <i>Sesbania punicea</i> |
| Mauritius thorn | <i>Caesalpinia decapetala</i> |
| Inkberry | <i>Cestrum laevigatum</i> |
| Balloon vine | <i>Cardiospermum grandiflorum</i> |
| Field bindweed | <i>Convolvulus arvensis</i> |
| Morning glory (perennial) | <i>Ipomoea indica</i> |
| Madeira vine | <i>Anreda cordifolia</i> |
| Water hyacinth | <i>Eichhornia crassipes</i> |
| Brazilian pepper tree | <i>Schinus terebinthifolius</i> |
| Yellow-flowered Mexican poppy | <i>Argemone mexicana</i> |
| Montanoa tree daisy (spreading in area) | <i>Montanoa hibiscifolia</i> |
| Camphor | <i>Cinnamomum camphora</i> |
| Indian laurel | <i>Litsea glutinosa</i> |
| DECLARED INVADER – CATEGORY 2 | |
| Common name | Botanical name |
| Guava and hybrids | <i>Psidium guajava</i> |
| Johnson grass | <i>Sorghum halepense</i> |
| Leucaena | <i>Leucaena leucocephala</i> |
| Castor oil bush | <i>Ricinus communis</i> |
| Black wattle | <i>Acacia mearnsii</i> |
| Silver wattle | <i>Acacia dealbata</i> |
| Bluegum | <i>Eucalyptus grandis</i> |
| Pine trees | <i>Pinus patula/elliottii</i> |
| DECLARED INVADER – CATEGORY 3 | |
| Common name | Botanical name |
| Syringa | <i>Melia azedarach</i> |
| Peanut butter cassia | <i>Senna didymobotrya</i> |
| Morning glory (annual) | <i>Ipomoea purpurea</i> |
| Jacaranda | <i>Jacaranda mimosifolia</i> |
| Orange cotoneaster | <i>Cotoneaster franchetii</i> |
| Loquat | <i>Eriobotria japonica</i> |
| Australian silky oak | <i>Grevillea robusta</i> |
| Common mulberry | <i>Morus alba</i> |
| WEEDS AND INVADER PLANTS PROPOSED FOR LISTING UNDER CATEGORY 2 (allowed only in demarcated areas) | |
| Common name | Botanical name |
| Couch grass, kweek | <i>Cynodon dactylon</i> |
| Perennial ryegrass | <i>Lolium perenne</i> |
| Kikuyu | <i>Pennisetum clandestinum</i> |
| Napier grass | <i>Pennisetum purpureum</i> |

The following unlisted alien plant species have been noted: *Senna occidentalis* (Wild coffee) spreads in disturbed areas, and *Sesbania bispinosa* (Spiny sesbania) is increasing in cane fields in Mpumalanga.



GUIDELINES FOR CONTROL OPERATIONS

Once a decision has been reached and a commitment made to control alien plants, planning is required to make the best use of the limited available resources.

Step 1: Survey and mapping

- Divide alien plant infestations into control areas. Use natural or man-made boundaries, e.g. rivers, roads and fences. Number these control areas for record purposes.
- Conduct a detailed alien plant survey in each control area. Record the following:
 - ▶ All the alien plant species present and their growth habits (trees, seedlings, coppice).
 - ▶ Estimate the percentage cover, e.g. 75-100% is very dense, 50-75% is dense, 25-50% is medium density, 5-25% is sparse, and 0-5% describes a scattered infestation.
 - ▶ The terrain, e.g. access roads or steep slopes that will slow down the control operations.
 - ▶ Sites of future wood lots for local community needs.
- Prioritise areas into high, medium or low priority for control and rehabilitation, according to importance criteria such as the threat to biodiversity, water yield or carrying capacity.
- Draw a map showing the numbered high, medium and low priority control areas and the surveyed alien plant infestations. Use aerial photos or 1:10 000 maps.

Step 2: List resources and select control methods

- List the required resources for each high priority control area (labour, herbicides, equipment) and the current management practices on the property (burning, grazing).
- Evaluate and select appropriate control methods, using registered herbicides.
- Calculate the control costs for the high priority control areas.
- Draw up a strategy (a collection of appropriate control methods) for alien plant infestations in each control area. Refer also to Information Sheet 10.7.

Step 3: Planning

- Draw up a plan of operations for the current year's work in high priority control areas. The plan must be flexible and allow adjustment as progress is made. The plan should include a budget for the resources (labour, herbicides and equipment) that will be required during the first year. Do not plan to control too large

an area; budget 75% for follow-up control work and rehabilitation of previously cleared areas, 20% for initial control of a new area, and 5% for an emergency 'fire/flood fund' to cope with catastrophic occurrences, such as mass seed regeneration of wattle after fire, or loss of planted grass seed during heavy rains.

- Next, allocate labour, herbicide, equipment and transport resources to the high priority control areas.
- Draw up timetables for control operations, that include contingency/'catch-up' times for use when operations have fallen behind, e.g. too wet, labour strikes, etc.

Step 4: Implementation

- Train labour in the correct alien plant control and grass planting methods at the beginning of the implementation phase.
- Maintain regular and close supervision of control operations.

Step 5: Record keeping

- Keep simple records of daily operations, e.g. record the labour days, herbicide volumes and equipment that were required for each operation. This establishes standards/norms for the control work.
- Monitor progress with the control work.
- Feed these records back into the budget to update and amend the plan of operations for year two, i.e. the plan for follow-up operations to control regrowth.

Advantages of management plans

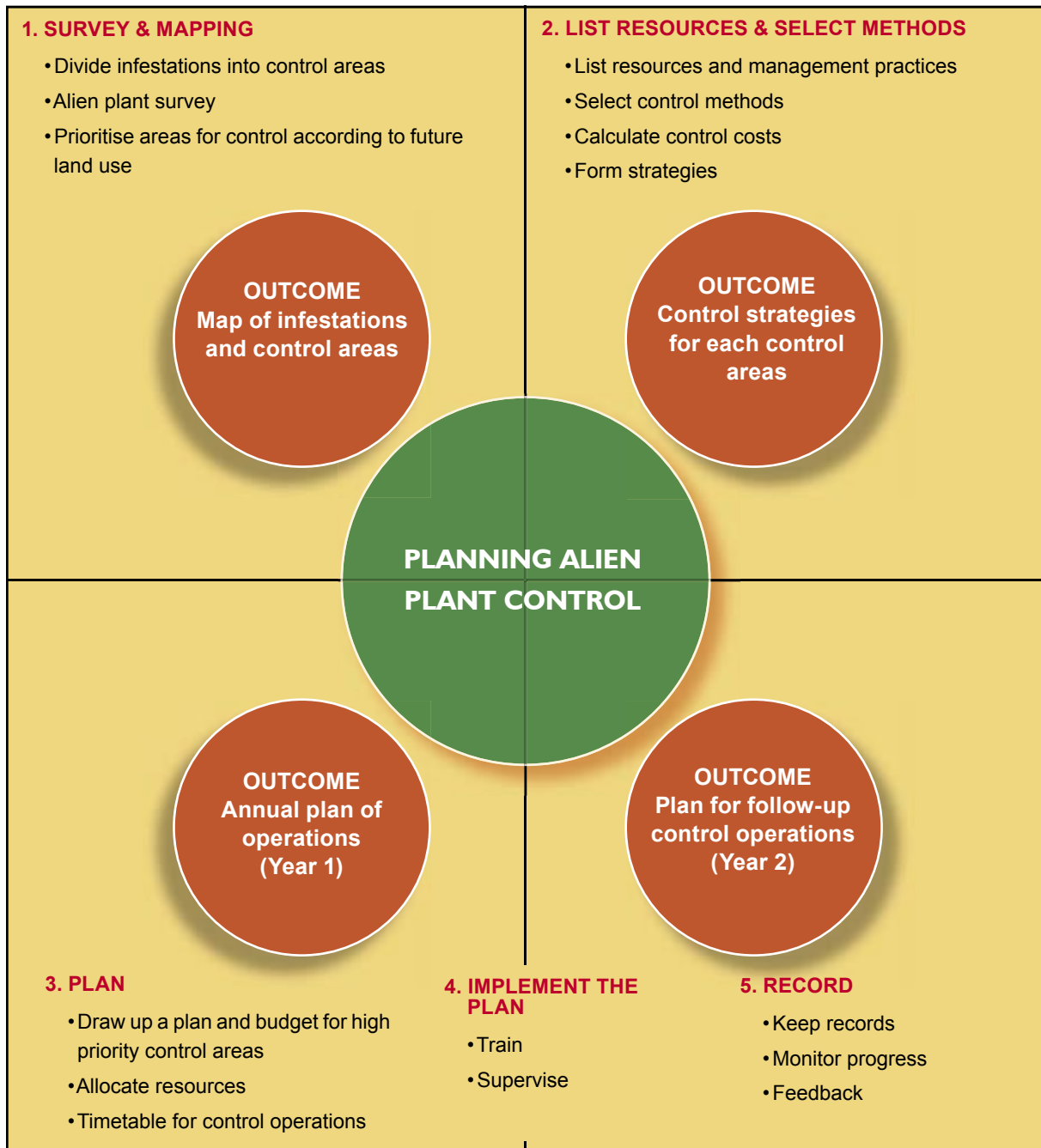
- Provide systematic allocation of the limited available resources.
- Aid in times of crisis management (e.g. after floods or fire).
- Promote continuity between successive land managers.
- Allow progress to be measured and maintained.

Correct implementation of the management plan and monitoring progress, results in the following:

- Decrease in the extent and/or densification of the infestations.
- Decreased annual control costs.
- Increased value of the property.



PLANNING STEPS FOR ALIEN PLANT CONTROL



Bibliography and Contacts

DLRM, KwaZulu-Natal: PO Box 345, Pietermaritzburg, 3200. Tel (033) 345-3557, Fax (033) 394-6161.

DLRM, Mpumalanga: PO Box 1665, Nelspruit, 1200. Tel (013) 755-1420, Fax (013) 755-1961.

Grobelaar H, Vermeulen JB and van Zyl K (2000). *A Guide to the use of Herbicides*. Seventeenth edition. National Department of Agriculture, Pretoria.

Henderson L (2001). Alien Weeds and Invasive Plants. In: *Plant Protection Research Institute Handbook No. 12*. Agricultural Research Council, Pretoria.

Plant Protection Research Institute, Agricultural Research Council, P/Bag X134, Pretoria, 0001.

ALIEN INVADER PLANTS

Category One



*Inset photo: S Nesper

Chromolaena / Triffid weed



Lantana



Pereskia / Barbados gooseberry



Bugweed



American bramble



*Photo: L. Henderson

Red sesbania



Mauritius thorn

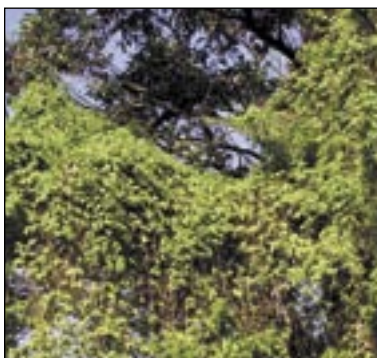


Photo: S Nesper

Inkberry



Madeira vine



Balloon vine



Flowers and fruit of the Balloon vine



Brazilian pepper tree



*Photo: GR Nichols



Camphor tree



Litsea / Indian laurel



Montanoa tree daisy

Category Two



Black wattle



Black wattle leaf nectar glands



Castor oil



Guava

*Photo: S Naser



Leucaena



Pine tree

Category Three

*Photo: L Henderson



Jacaranda



Syringa



Peanut butter cassia

Acknowledgements: * From Henderson (2001) (see bibliography)

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