

ARC-PPRI FACT SHEETS ON INVASIVE ALIEN PLANTS AND THEIR CONTROL IN SOUTH AFRICA

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INVASIVE ALIEN PLANTS are plants that spread aggressively, and which threaten indigenous ecosystem functioning and biodiversity. Usually, they have been introduced into the country as ornamentals for gardens, or for cultivation in forestry or agriculture, e.g. mesquite (i). However, many have also been introduced unintentionally—for example, in animal feed. Alien plants are often also referred to as exotic, foreign, introduced, non-native, and non-indigenous.

THE PROBLEM

When plants are removed from their natural environment, they often require special nurturing because their new habitat is not entirely suitable. However, owing to particular weedy traits, some alien plants thrive in their new environment and reproduce freely. While indigenous plants have a host of natural enemies, e.g. pathogens and herbivores, that feed on them and control their spread naturally, alien plants in a new environment are no longer subject to their natural enemies. This is one of the factors that enables them to outcompete and displace the surrounding, indigenous vegetation. Once alien plants begin spreading and populating new areas, they are considered to be invasive. In South Africa, some of these plants are Declared Weeds, and their cultivation is prohibited.

Invasive alien plants threaten ecosystems and biodiversity in a number of ways. By their greater size or creeping habit (ii), they may compete with indigenous vegetation for natural resources. Some displace indigenous vegetation by changing the chemical composition of the soil, or by releasing compounds that hamper the growth of surrounding plants. This, in turn, affects the animal life associated with that habitat, and further reduces biodiversity. Toxic or spiny plants, such as lantana or cactus, may invade agricultural land and poison or injure livestock. Certain plants, such as pines, are a fire hazard because they contain flammable compounds that cause very hot fires which indigenous vegetation is unable to withstand. When alien plants invade catchment areas, they reduce the volume of water reaching rivers and dams, and may even stop streams from flowing. Also, they often tend to populate areas alongside rivers and other water bodies where they compete with the surrounding indigenous plants for water, and eventually choke them out. Alien aquatic plants, such as water hyacinth, form a solid mat on rivers and dams. This restricts hydro-electric schemes, water transport, and subsistence fishing. It also blocks sunlight to aquatic organisms, and may cause livestock losses through drowning.

THE SOLUTION

Mechanical and chemical control of invasive alien plants is costly, labour-intensive (iii), and seldom effective in the long term. The only sustainable solution is biological control. Often referred to as biocontrol, this is the use of host-specific natural enemies, e.g. insects (iv) or pathogens, to reduce the spread and vigour of invasive plants. A separate fact sheet is available on the science and practice of biological control.



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