

Bankruptbush (Slangbos) – A silent threat to grasslands?

Dieter Jordaan

Department Agriculture, Conservation and Environment, Potchefstroom,
North West Province

Email: djordaan@nwpg.gov.za

Introduction

Encroachment of *Stoebe vulgaris*, currently known as *Seriphium plumosum*, in both planted pastures and natural veld, is a serious problem in most of the provinces of South Africa. The provinces that are worst infested, are the North West, Free State, Eastern Cape, Mpumalanga, Gauteng and certain parts of KwaZulu-Natal.

The plants are part of the Family Asteraceae (daisy family) and there are a total of 36 species of which two are in Madagascar and 34 in South Africa. The species that occurs on the Cape flats is not the aggressive species that is discussed here. The *Stoebe* species (previous name) are quite common and have a widespread distribution throughout South Africa. *Seriphium* is derived from seraph, a stroke or line of a letter; *plumosum* means feathery.

General names

Slangbos

Bankrupt bush

Vaalbos (to a lesser extent)

Khoi -kooigoed

Plant characteristics

The plant is a small multi-stemmed woody shrub that grows to an average height of 60cm and a width of 60cm. The light colour of the shrub reflects sun light; the woolly covering and small leaves reduce water loss and are adaptations to survive long dry summers. This is supported by its root system which may vary from 1m² around the plant and can be 1.8m deep. However, this specific species of plant usually does not occur in lower rainfall areas (less than 400mm rain, personal observation).

The plants show aromatic characteristics by yielding volatile oil, which acts as a successful protective measure against animal grazing by making it unpalatable (apparently only Eland utilize it to a lesser extent) and thus providing no fodder.

The bankrupt bush is a low fertility plant that prefers lighter (sandy) soils and occurs mostly on foot slopes and mid slope terrains but is not seen on clay soils in a valley bottom (vlei area).

Origin

Seriphium plumosum is indigenous to South Africa and is not a so-called pioneer plant. The plants probably increased due to poor soil fertility status on abandoned or poorly maintained cultivated lands or poor veld management strategies. Poor veld management ensures the retention of and the survival of these bankrupt bush plants.

Heavy stocking rate (although it can be a part of poor veld management) is not directly the cause of an increase in plants.

Impact

Generally, *Themeda* / *Cymbopogon* veld becomes encroached by *Seriphium* and the primary grass production can be reduced up to 75% with an infestation of 10 000 or more *Seriphium* plants per hectare. The threat of this is that a profitable fodder can be turned into a degraded piece of land on which sustainable cattle farming is no longer possible.

In spite of all efforts to make farmers aware of the disadvantages of the plant there is a huge tardiness to realize how serious the problem really is.

Control

Thinning

After 2-3 years the density of the bush increases - it should be thinned 8-10cm beneath the ground surface. This is not a recommended practice.

Burning

This increases encroachment because of the drastic increase in seed.

When plants are thinned the plants with seed on should be burnt.

The only effective time for burning is in the spring or early summer.

Burning is not recommended generally because of the bad influence on the grass specie composition. Burning can however be combined with chemical control.

Thinning and burning the bush may in fact make the problem worse because the seed germinates a great deal more after these procedures. However, they do have a place in an integrated strategy made up of all control methods.

Chemical control

Hand application for single plants with suspension or granules can be used.

Air application of soil applicants in a granular form can be done in areas exceeding 200ha.

Broad application with tractor and boom is also possible.

Problems with the practical execution and effectiveness can be the following:

- Topography and accessibility of the terrain
- Selectivity of the product (soil agents have very little selectivity whereas foliar sprays are very selective)
- Time of the year (only in growing season)
- Clay content of soil (soil agents are not economically viable in soils with more than 20% clay)
- Rainfall and the distribution thereof (apply soil agents during the beginning of the rainy season)

Agents

The active ingredient is Tebuthiuron. It belongs to the soil agent group and needs rain to wash it into the soil (the residual effect can be up to 5 years).

Retail names: Molopo, Limpopo, Brushhoff and Climax.

The chemical is transported to the leaves where photosynthesis is inhibited; the leaves turn yellow and fall off. No carbon fixation takes place and the root reserves are depleted and the plant dies. The herbicide has no selectiveness – all woody plants will die. Grass damage is minimal with the correct dose.

The herbicide is available in granular form (GG 20 kg containers) and suspension (SC 5 l containers).

With single plant applications, the granules are applied with a small spoon at the rate of 1.5g per plant. The suspension is diluted at a ratio of 1.5 litre of agent to 8.5 litre water and injected in 2ml dosages.

Only granular agents can be used for aerial applications. The rate should be 5kg/ha using an additional 1kg/ha when the clay content is between 11 – 22%. Aerial spraying should only be used when the contaminated area is larger than 200ha.

A tractor mounted boom sprayer is an alternative, applying 2 litre of SC in 100 – 200 litre of water per hectare.

No after care is necessary for the first year because it takes the chemical up to 12 months to react under certain circumstances.

The agent is not affected by sunlight. It will not poison cattle and game. However fire will destroy any agent that has not been washed into the soil.

Costs

Costs are between R 200 and R 550 per hectare depending on the density.

Planted Pasture

Increase the soil fertility status of the pasture by applying nitrogen and the abundance of the encroacher will decrease.

Recommendation

The resting of veld is not the answer to eradicate *Seriphium plumosum* (not the normal rest that should form part of a management programme). Intensive over grazing can suppress the growth of *Seriphium plumosum* by a combined influence of and an increase in soil fertility due to urine and dung and trampling (physical damage). An integrated strategy where all the options are used should be considered to make it economic and ecological viable. For the sparse infestations a single plant application can be done by hand – SC at 1.5L of the “agent” and 8.5 L water ratio. More than 5000 plants per hectare: tractor with suspension if the terrain permits.

Treatment can start at the beginning of the growing season because the chemical is not broken down by sunlight. There is no danger of poisoning animals and game and animals do not have to be withdrawn from the camps. The only prerequisite is that there should be no danger of fires because the chemical is destroyed by fire if the rain has not yet washed it in the soil. In areas with a danger of fire it is perhaps better to wait for the first spring rain or at least to the middle of October.

It is imperative to do veld reclamation in many cases where the seed source of the natural occurring grass species in the ground, does not exist.

For more information on the control please contact Chris Richter from Terra Care 082 458 4558 or Dieter Jordaan at 018 297 5330.

