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Basic guidelines for veld improvement

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What is veld improvement?
Veld improvement is when veld in a poor condition is improved by sowing seed of palatable indigenous plants, adapted to the region. This is done because most plants that are available for grazing are not eaten by domestic animals, such as poisonous plants, or there are virtually no plants left, for example exposed land. Veld deteriorates when grazing takes place injudiciously and the plants do not have a chance to recover, to flower, to form seed and to establish seedlings.

Why is it important to improve veld?
Veld improvement is important since, after the animals have grazed out the palatable bushes and grasses over a long period, there is no more seed from these plants left in the veld. This is mostly the result of a poor grazing system, where grazing takes place at the wrong time of year. The camps are grazed at the same time each year, specifically when they are in flower and producing seed. In this way they are grazed down, and after a time there will no longer be any palatable plants or any of their seed in the veld, so that seed has to be sown. It is important to get a larger variety of plant types into the veld, to provide more food and to improve the biodiversity. This is usually done when the veld has deteriorated to such an extent that the removal of domestic animals alone will not have an impact, but some action needs to be taken.

For example, on:
- Bare patches and overgrazed veld where pioneer plants, such as kraalbos, are dominant;
- Old lands where recovery to natural veld can be achieved through over-sowing.

Another advantage of veld improvement by means of sowing of seed is that the plant composition of a dominant, less edible species combination is changed to a more edible species composition, which can improve the carrying capacity of the camp. By improving these poor areas, often with a low cover, protection can also be provided as a guard against climate change, even though it contributes only in small measures.

How can I improve veld?
It is important to break the soil crust in order to create a seedbed in order to improve the germination and establishment of the plants.

Improvement of poor veld and old grazing land with permanent, more edible plants:
Here sowing is done by hand to prevent soil compaction by vehicles driving through the veld:
- Sow the seed after the first rain of the rainy season.
- Use a spade or garden fork and loosen a little soil under a small bush, preferably vygies.

- Place a few seeds in the loosened soil and step on them firmly. Do not cover the seeds with soil.
- Alternatively, seedlings which have been germinated in seed trays or boxes may be planted under the small bushes.
- Distribute the seed over the largest possible area and complete the sowing in one area/camp before moving on to the next area/camp.

Improvement of bare patches and old lands:

- Where large bare areas need to be restored, a tractor and implements may be used.
- These include: ripper/butting plough, pitter plough, ghrop, deep tillage plough, mouldboard plough.
    (i) The ripper/butting plough is the most cost effective method for restoring the bare patches in the Karoo.
- Ploughing should be done as deeply as possible (>300 mm), otherwise it will silt up when the first rains fall and not achieve its purpose. This is particularly the case on bare patches with clayey soils.
- In sandy soils the top soil layer should also be broken, to a depth of at least 250 mm.



- Plough adjoining strips, 1-2 m apart, and directly in line with the flow of the water.
- Cover the area with organic material, which includes branches or straw, and/or make holes/furrows for preserving moisture and creating a micro-climate and seed-bed.
    (i) On sandy soils which are inclined to be vulnerable to wind erosion, nets may be erected directly in line with the general wind direction.
- Sowing seeds of the desired species (3-5 kg of seed mixture/ha):
    (i) Ensure that mixture also contains pioneer species.
    (ii) Use seed endemic to the area.
    (iii) Sow seeds after the first rain of the rainy season.
    (iv) Place a few seeds in the furrows, 1 metre apart.
    (v) Do not broadcast the seeds; in this way a lot of seed is lost.
    (vi) Do not cover the seed with soil.



Where do I get seed?

Relatively large quantities of seed may be purchased from the Worcester Veld Reserve or, if available, harvested in your veld. If seed is harvested outside of your farm, written permission from the land owner is required, and if seed is harvested from endangered or protected plants, a permit is required from Nature Conservation (CapeNature).

- Seed may be harvested by picking it by hand or using a vacuum cleaner or grasses may be cut with a sickle. Seed is usually ready for harvesting when it starts to discolour.
- Currently it is only at the Worcester Veld Reserve and one or two private establishments that seed is propagated and sold to farmers for the rehabilitation and/or improvement of their veld.
- The species of which seed is propagated at the Worcester Veld Reserve come from indigenous plant species which the grazing animal prefers, and include: Karoo bitou (*Tripteris sinuata*), hartbees grass (*Chaetobromus dregeanus*), hair bush (*Hirpicium integrifolium*) and wild rosemary (*Eriocephalus africanus*).



An increasing number of people are becoming aware of the importance of improving poor veld and that is why the demand for seed of indigenous, palatable species is constantly growing.

- The Worcester Veld Reserve cannot keep up with the demand for seed from right across the Western Cape and also from neighbouring provinces. That is why it has been extended to the Nortier Research Farm near Lamberts Bay.
- Seed harvested and sold at Worcester has not necessarily been adapted in all the regions, and consequently does not always establish itself successfully. That is why it is important that plantings be extended to other regions of the province.
- The environment determines the types of plants which will occur there, consequently you should use plants adapted to the region to obtain good results. Plants in the summer and winter rainfall areas differ from each other, even if they are of the same species. There are even differences within these regions, based on the differences in climate and soil type.
- Do not sow/plant exotic species.

Management

- Let the veld rest for at least one growing season so that plants can flower, produce seed and establish seedlings. Do not commence with grazing in the camp until sown plants have flowered at least once, formed seed and established new seedlings.
- Finish planting/sowing a camp before commencing with the next camp.
- If planting has taken place in camps which form part of a grazing system, ensure that the plants are given the opportunity to produce seed at least twice in three years, in order to ensure survival and distribution.
- As far as possible, keep the animal numbers below the recommended grazing capacity.
- To achieve veld improvement it is important to make available in the soil seed of desired species (which are absent); only resting the veld will consequently not be successful.
- The most important thing is that the veld should never fall into such a condition that active improvement is required.
- Restoration/rehabilitation is very expensive, so look after your investment (veld) well.

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