

# Prosopis — the pros and cons

*The benefits of prosopis trees might well outweigh their disadvantages says Andreas Wienecke, Research Manager at the Habitat Research and Development Centre of Namibia. He suggests that these trees should possibly be regarded as a multi-purpose species ideally suited to Namibia's arid regions.*

**A**lthough prosopis is found in many parts of Southern Africa, it is not an African genus at all. The trees originated in the arid regions of Mexico and the southern United States of America, where they are known as *mesquite*. The genus belongs to the leguminous (bean-pod-bearing) family and is classified as a hardwood tree.

In Namibia prosopis is widespread. There are several types, including the honey prosopis, *Prosopis glandulosa*, and the velvet prosopis, *P. velutina*. The spines of *P. glandulosa* emerge at nodes on the branches and the leaflets of *P. velutina* have grey hairs.

Prosopis trees started to spread in the southern African region after pods were imported in the 1940s as a source of cattle fodder. Livestock ate them and the indigestible seeds were then distributed in the veld. Due to the easy propagation of the seeds, prosopis trees established themselves easily. Wild and du Plessis point out that in one district in the Great Karoo, prosopis increased by 400% within 17 years. The result was an impenetrable stand of trees bearing no pods. This has led South Africa to proclaim it an invader species in terms of the Conservation of Agricultural Resources Act (Act No 43 of 1983).



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## A major management problem

This indicates that the prosopis is difficult to manage. According to a paper by Nick Pasiecznik, "For over fifty years, ranchers in south-western USA and Argentina have tried every possible technique to eradicate or control prosopis. The end result? Millions of dollars spent and still no cost-effective programme found. In Sudan, the eradication programme even

included training children to uproot the seedlings. In South Africa and Australia, amongst others, eradication or control programmes exist, and new methods of biological control using seed-eating beetles are being attempted."

The failure to control the spread of prosopis is the result of human interference in natural processes and the lack of understanding of the consequences of such interference. Depending on the animal that eats the seeds, prosopis is either digested or distributed even further.

Cattle spread the seeds widely, as they do not digest them, whereas in sheep most of the seeds they ingest are destroyed in the digestive process. In pigs all the seeds are destroyed. Distribution is therefore less likely to occur in southern Namibia, due to the prevalence of small stock, than in northern parts of the country, where cattle are common.

Another problem associated with prosopis trees is that during spring they have fluffy yellowish flowers, whose pollen can cause allergies and

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Mr Frans Ndoroma, Managing Director



hay fever. These concerns have resulted in classifying the species as a curse or weed. Some local authorities require the removal of prosopis in built-up areas, and in rural areas farmers are urged to destroy their trees. However, individuals and institutions are trying to promote the utilisation of prosopis. An example is the Henry Doubleday Research Association, which has been supporting a Tree Seed Distribution Project since July 1989. Since then information and advice have been provided to 194 projects in 38 African countries. Moreover, the seed of 106 different selected tree species has been sent to 110 of these projects – enough to plant over three million trees. The reason is that prosopis is drought tolerant and has many potential uses.

## Pros and cons

The views for and against prosopis come from different quarters. Those that can afford bottled gas for cooking and do not have to raise livestock soon forget the value of prosopis as a fuel and fodder tree. "Comments concerning its monoculture, lack of aesthetic value and unconfirmed beliefs on the lowering of water tables come only from the more affluent. Rural farmers are invariably aware of the tree's importance. While prosopis is generally the scourge of ranchers and pastoralists, it is a boon to the rural poor. In contrast to the negative classification of prosopis as a weed, in India, where prosopis provides up to 70% of the firewood needs of rural populations in dry regions, only its value is noted."

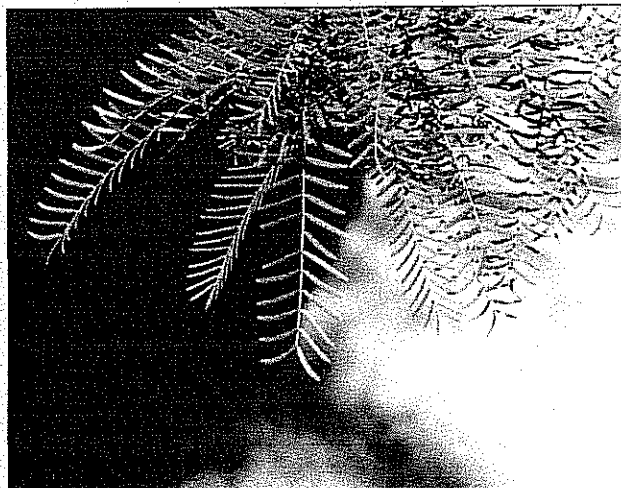
Although the trees can reach heights of 10 to 20 metres,

they require very little water. The long root systems obtain the necessary moisture from deep in the ground. Prosopis can grow in most soil types, including saline soils and soils of high alkalinity. This can be observed especially in Warmbad where the hot-water springs provide saline water to the area.

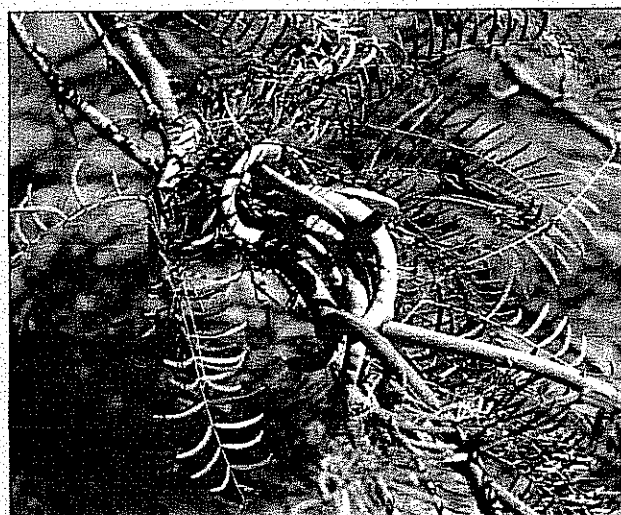
According to Pasicznic, it seems that once prosopis has arrived, it is here to stay. Why not, therefore, learn how to live in harmony with this virtually naturalised Namibian species? Shouldn't Namibians have another look at this source and start utilising it? There are many uses for the various parts of a prosopis tree.

The production of pods and seeds is dependent on rainfall. In years with little rain, prosopis trees may produce no pods at all. A mature prosopis tree produces up to 50 000 seeds per annum. The pod production is about 3.34 kg per tree (FAO), and there are about 30 000 seeds per kilogram (Winrock International). According to Frank Bonner, an average of 7.2 kg of fruits per tree from velvet mesquite was available, whereas yield averages for the honey mesquite were 2.2 kg per tree.

The hard and durable wood of mesquite can be used for building purposes, weapons, tools and furniture. The wood burns slowly and is smokeless, and when used for cooking, gives food an excellent flavour (*Desert USA*). The bark can be utilised for making cloth, baskets and rope. The gum of the trees is useful in making face paint, hair dye, pottery paint and also as a glue to mend pottery. Wild animals, livestock and birds use mesquite as shelter, and bees produce honey from the flowers.



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Mesquite products, for example gum, can be used for various medicinal purposes, such as lice control and the treatment of sore throats, skin sores and ulcers. New Mexico State University lists other medicinal properties, such as treating eye conditions, open wounds, dermatological ailments and digestive problems. Prosopis has antibiotic activity and its aqueous extracts are antibacterial. It also has soothing, astringent, and antiseptic properties. A good eyewash for treating pink eyes can be prepared from the leaves. They are also used to treat diarrhoea, intestinal or stomach obstruction, headaches, painful gums and bladder infections, and can serve as an emetic or system cleanser.

Soils under mesquite trees are enriched with nitrogen.

Mesquite may be established as tree crops for alley cropping, windbreaks, or timber belts.

Peattie summarised the benefits and problems related to the spread of prosopis/mesquite as follows: "So mesquite is something more than a tree; it is almost an elemental force, comparable to fire – too valuable to extinguish completely and too dangerous to trust unwatched."

Prosopis clearly has more benefits than disadvantages. The question is, is it an ideal tree and multi-purpose species for Namibia's arid regions? To answer this, information needs to be disseminated in order to evaluate the usefulness and problems associated with these trees. ■