

letters

Write in with your stories, news, gripes, brickbats and thoughts. Send them to: The Editor, *Veld & Flora*, Botanical Society, Private Bag X10, Claremont, 7735 or email info@botanicalsociety.org.za. You are also welcome to write on the *Veld & Flora* Facebook wall at <https://www.facebook.com/VeldandFlora>.



TOP: The transition from few spines on the old leaves to many spines on the new leaves is clearly depicted on this *Aloe marlothii*.

ABOVE: In the foreground is the spiny *Aloe marlothii* from the Makatini flats, greyish in colour, and not touched by the kudus, who prefer the smoother leaves of the Waterberg *Aloe marlothii* plants in the background.

Kudu browsing raises spines

It is a well known fact that kudus browsing shrubs and trees cause the shrubs to 'warn' their neighbours that their leaves are being eaten so that they can increase their leaf tannins to make them less palatable so that the kudus move away. The tannin results in the non availability of protein to the animal when ingested and the animals can, if not exposed to new feeding areas, die of malnutrition even when enough feed is available.

This past season, in September, my nature area in the Waterberg was visited by around eight female kudus. They typically moved through the vegetation, eating the terminal shoots of various trees and shrubs but also decided that the *Aloe marlothii* plants were to their liking. They visited the plants every night for around a week and then left.

The aloes were well cropped of their lower leaves but when the new leaves and the younger ones grew out I noticed that straight after the cropping, the leaves became full of spines, probably around 300% more spines than before the feeding.

I have collected other seedlings from many parts of the country and within about two metres of this group of four *Aloe marlothii* from my farm are three similar sized plants from the Makatini flats which are just always covered in spines. What is interesting is that the leaves of these plants were not eaten by the kudus at all, due to their inherent numerous spines.

I wondered what causes spination in aloes. Is it also a chemical given off in the leaf in the action of feeding which causes whatever hormone is necessary to produce more spines in the meristematic region where leaf tissue is formed? Maybe the kudus give off some chemical in the process of eating that causes this drastic reaction in the aloe to try to protect itself from further browsing.

The transition from few spines to many is clearly depicted in the illustration here. Maybe other readers have also seen such reactions in plants after browsing; this seems an extremely interesting physiological phenomenon in the *Aloe marlothii* plants to which answers are not yet known.

Ralph G. Peckover

Ernst van Jaarsveld, Kirstenbosch, replies:

This is an interesting reaction of the leaves, and would make sense to protect the plants from grazing. However if this is right, one would be able to easily test it in cultivation by growing the aloes in rows from seed; and observe the reaction of leaf removal in half of them. I wonder if the closely related *Aloe ferox* farmers in Albertinia could report on similar incidents as they remove leaves on a continual basis.

My own experience is that *Aloe marlothii* varies a lot in spine formation, however this is linked to distribution. Some parts have very dense spine formation (especially in the dry Bushveld parts) and some have almost no spines (in higher rainfall areas such as the KZN Midlands) which makes sense. However this reaction to browsing within a population is significant.

Surely it should be a hormone signalling to the plant to produce more spines. However this would be the work of a plant physiologist. If you send me some seed to Kirstenbosch, I will test the change in spine formation, with pleasure, and it could make a great article for *Veld & Flora!*