

CATTLE PREFERENCE FOR TWO GENOTYPES OF FRESH *LEUCAENA* FOLLOWING THE MANIPULATION OF THEIR TANNIN CONTENT WITH POLYETHYLENE GLYCOL

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The acceptability or preference of new genotypes of *Leucaena* to ruminants could be limited by their condensed tannin (CT) content. Tannins have been implicated as a factor influencing the palatability of forages, and there is considerable variation in the CT content of accessions across the *Leucaena* genus (Wheeler *et al.* 1994). We tested the impact of CT content on acceptability by treating high and low tannin genotypes of *Leucaena* with either water or the tannin-neutralising agent polyethylene glycol (PEG) prior to offering it in a fresh form to penned steers.

Four 18 month-old Brahman-cross steers were used to assess preference for *Leucaena leucocephala* cv. Tarramba and *Leucaena pallida* after spraying the foliage of each with either water or an aqueous solution of PEG. Each steer was offered one of the 4 treatments each day for 4 days in a Latin square design. Within each day the same treatment was offered twice, at 0800 and 1300 hours, to the same animal for 4 minutes each time. The steers were offered the treatment feed simultaneously with a standard feed such that they could freely choose between the two. Amounts of each were weighed at the start and finish of the 4 minute periods and the preference rating calculated by: Preference (%) = {Weight of test feed eaten, g / (Weight of test feed eaten, g + Weight of standard feed eaten, g)} * 100. The steers were familiarised with the above protocol for 9 days before the experiment began. The standard used was a *L. leucocephala* x *L. pallida* hybrid (extractable CT content, 86 ± 8.5 g/kg DM). The leucaenas were harvested prior to 0800 each day by cutting several 1 m long stems with leaves attached and kept fresh by immediately immersing them in water. These were wired into bunches that weighed approximately 1 kg, sprayed with either water or the PEG solution until dripping wet, shaken to remove excess water, placed into 0.5 m long PVC 'vases' and offered to individual steers by tying the vases to the sides of the pen approximately 1 m off the ground. The test and standard vases were placed close together such that the forages in each vase touched. Leaf samples from each treatment were collected on to dry ice daily just prior to offering, bulked within days, freeze-dried and assayed for extractable CT using a modified version of the Butanol HCl method of Porter *et al.* (1986).

Untreated, *L. pallida* had the highest concentration of CT and it was less preferred than the *L. leucocephala*. Treatment with PEG reduced the concentration of extractable tannin in both *Leucaena* genotypes. This reduction enhanced the preference rating of the *L. pallida*, lifting it to about the same level as that for the *L. leucocephala*. The lack of change in preference for *L. leucocephala* after treatment with PEG could be due to its already lower level of tannin and possibly due to the less astringent nature of its tannins compared to those in *L. pallida* (Osborne and McNeill 1997).

Table 1. Concentrations of condensed tannin (CT, g/kg DM) in *L. leucocephala* and *L. pallida* before and after treatment with PEG and associated preference (%) for each by steers

	<i>L. leucocephala</i>		<i>L. pallida</i>		s.e.m.
	No PEG	+PEG	No PEG	+PEG	
Extractable CT	75 ^a	46 ^a	147 ^b	33 ^a	21.7
Preference	54 ^a	60 ^a	28 ^b	47 ^a	5.1

Values within rows followed by different letters are significantly different at P < 0.05

We conclude that the tannin in *L. pallida* may inhibit its short-term intake by cattle.

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