

## PLANT IMPROVEMENT:

## Impact of drought on survival of pasture species

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During 1994 the severe drought which occurred throughout NSW provided an opportunity to assess the impact of drought on the persistence of grazed pasture plants. Changes in the botanical composition of two grazed pastures on the Northern Tablelands were observed as part of a nationally-coordinated grazing management study (Harris *et al* 1994). The reported observations cover the period March 1994 to March 1995 which encompassed a drought period (to January 1995) and a subsequent recovery period.

## Methods

Species composition was estimated using Botanical procedures at two sites: a tall fescue/cocksfoot/volunteer pasture on a granite soil at Dundee, and a multi-species pasture (exotics, natives, invaders) on a basalt soil at Glen Innes. Pastures were continuously grazed with sheep at stocking rates which were lowered as the drought proceeded (from 7.5 to 0.8 sheep/ha).

## Results

With the exception of phalaris, the contribution of exotic species showed a sharp decline from 1994 to 1995 at both sites (Table 1).

The main surviving species on the granite soil were crab grass (*Eleusine tristachya*) and native grass, mainly Parramatta grass (*Sporobolus creber*) which together made up 80% of pasture yield in March 1995. On the basalt soil, phalaris (*Phalaris aquatica*) and native grass (wallaby grass - *Danthonia linkii*) together increased from 33% to 70% of total yield. At both sites the remaining herbage consisted mainly of broadleaved weeds and volunteer annual grasses. Botanical diversity at each site (expressed as the number of species contributing at least 10% to yield) was halved, but some recovery remains possible from surviving tillers.

## Acknowledgments

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## References

Harris, C.A., FitzGerald, R.D. and Ayres, J.F. (1994). Grazing management for sustainable pastures on the northern tablelands of N.S.W. *Proceedings Ninth Annual Conference of the Grassland Society of NSW*. Queanbeyan, pp.111-12.

Table 1. Percent contribution to yield of the main pasture species pre- and post-drought

Soil type	Year	Pasture species					
		Fescue	Cocksfoot	Phalaris	Ryegrass	Native grass	Crab grass
Granite	1994	16	21	-	-	14	39
	1995	0	1	-	-	29	51
Basalt	1994	11	9	23	16	10	0
	1995	1	1	47	0	22	3