

Lotus news from the northeast of Uruguay.

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The more important legumes in the north-east region of Uruguay are *Lotus corniculatus* and *Trifolium repens* (Allegrí and Formoso, 1980; Olmos, 1991). When the soil is cultivated both produce 6-10 tons of dry matter/ha/year, but with a different seasonal pattern (Table 1) (Formoso and Allegrí, 1983).

Table 1 - Seasonal dry matter production (%) of *Lotus corniculatus* and *Trifolium repens*.

	Autumn	Winter	Spring	Summer
<i>T. repens</i>	22	23	52	3
<i>Lotus</i>	24	10	44	22

The rate of phosphate applied annually determines which of them dominates in a pasture, when they have been sown together; the higher rates give *Trifolium repens* pastures, while with lower rates, white clover is lost and *Lotus* is still present (Moron et al., 1982).

Besides this, climate factors affect the proportion of *Lotus* and *T. repens* on mixed pastures (Table 2). Dry summers increase the *Lotus* content in the next season, while the reverse is true if the precipitation matches the evaporation rate (Olmos, 1994).

Table 2 - Botanical composition of mixed pastures (%) in Spring and Autumn-Winter.

year	December		Autumn-Winter		Summer precip/evp.
	w. clover	lotus	w. clover	lotus	
83-84	52	39	64	25	.81
84-85	66	16	11	48	.24
85-86	26	19	5	48	.41

In extensive grazing areas animal performance is limited by the quantity and quality of the forage consumed, which is about 70 % of C-4 grasses (Olmos and Godron, 1990).

Owing to economics and conservation factors *Lotus* and *T. repens* have been introduced in the natural grasslands by oversowing. The methodology works well for *Lotus*, but it fails many times when used with *T. repens*.

In 1992 we started a set of experiments to assess the more important variables (rate and time of sowing, sources and rate of phosphate fertilizer) affecting *Lotus* establishment, productivity and persistence with this method.

The quantity of phosphate applied was the most important variable, increasing LAI, forage quality, seed production and recruitment of new plants in the following season.

A simple matrix model was developed to study populations dynamics, and showed that the persistence of the improved pasture relies more on the recruitment of new individuals each year than on the individual plant longevity.

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