

J. P. A. ANGSEESING and M. A. SAUNDERS

St. Paul's College, Cheltenham, GL50 4AZ, Great Britain

DIFFERENTIATION OF LOTUS CORNICULATUS POPULATIONS WITH RESPECT TO ASPECT

We have examined several pairs of L. corniculatus populations on opposite (north/south) slopes of hills and embankments, determining their proportions of cyanogenic and acyanogenic plants. Our results for a single site at Andoversford (map ref: SP028200) are tabulated below:

Aspect	Slope	% plants cyanogenic	pH Soil	H ₂ O (winter)	% leaves nibbled by molluscs (June)	% leaves badly damaged
North	32°	4% (N=248)	6	30.5%	14.8 (N=642)	14.2
South	24°	90% (N=59)	6	33.8%	14.1 (N=542)	6.1

We also recorded leaf damage to Lathyrus pratensis, an acyanogenic legume, from both slopes (Results: North = 63% nibbled and 17.5% heavily damaged, N=200; South = 60% and 15.6% respectively, N=205) on the same day we scored L. corniculatus for leaf damage. The leaf damage criteria are analogous to those used for Trifolium repens (Angseesing, Heredity 1973).

These, and data from other sites, suggest a major role for local temperature differences in differentiating between neighbouring L. corniculatus populations for frequency of cyanogenic plants. The Lathyrus pratensis figures suggest the effect is direct and not via molluscan herbivore abundance.

We are still accumulating ground temperature, soil moisture, and herbivore abundance data.