

OLGA BORSOS, E. HARASZTI and J. VETTER

Botanical Garden of Eötvös L. University, and the Veterinary College,  
Budapest, Hungary

CHANGE OF CYANOGENETIC GLYCOSIDE CONTENT OF SOME CULTIVARS OF LOTUS  
CORNICULATUS DURING THE VEGETATION PERIOD

Variations in dry matter and cyanogenetic glycoside contents of six cultivars of Lotus corniculatus (cv. Viking, G-narrow leaved, cv. Empire, cv. Kubanskij-44, two wild plants from Nagykallo) were examined from early spring to the end of their vegetation period. Their cyanogenetic glycoside contents were characterized and compared on the basis of the quantity of hydrocyanic acid (HCN) liberated and measured by a method developed by the authors. On the basis of the data obtained, the following conclusions may be drawn:

1. During the vegetation period the change of the cyanogenetic glycoside content of the different cultivars is in the same manner within the different taxa. The very high early-spring (April) values gradually decrease in May, then again increase during the period of flowering (June). After cutting, a smaller maximum may be observed during the state of full flowering, followed later again by a decrease of HCN content. During the whole vegetation period the lowest values were measured in late autumn.

2. The differences found between the cultivars were not significant.

3. On the basis of our data on the cyanogenetic glycoside content of Lotus cultivars, it can be stated that HCN is the highest in the periods of growing and flowering. In these periods the values significantly differed from data obtained during the previous and following phenophases.

4. Although many further investigations are necessary, a more precise understanding of the metabolism of these compounds is necessary. Our data may also contribute to a better solution of problems in the fields of fodder- and plant production. Our intention is to extend these investigations to wild growing tetraploid and diploid taxa, in order to explain the connection between the appearance of cyanogenetic glycoside content and their gene stocks. Because of the valuable forage content of Lotus taxa, it seems advisable to select types with low cyanogenetic glycoside content for starting a program of plant improvement.