The inheritance of tannins in birdsfoot trefoil (Lotus corniculatus L.) and tannin development in several forage legumes. M. Sc. thesis, Univ. of Sask. by E. J. Dalrymple (nee Cook), February, 1982. Supervisor - Dr. B. P. Goplen

Abstract: Using controlled crosses of high and low tannin plants, tannin in birdsfoot trefoil was found to be controlled by a single dominant gene. The F_2 and backcross generations gave disomic rations, consistent with an allotetraploid interpretation. Heritabilities for tannin levels were calculated based on parent-progeny regression with adjustments for environmental covariance. Heritabilities were 53% using data from chemical analyses and 80% using ratings based on the vanillin-HCl spot test.

Forage species known to contain tannins were examined for location of tannin, tannin quantity, and for time taken from germination to tannin appearance. High tannin levels developed rapidly in sainfoin (Onobrychis viciifolia Scop.), while tannins in crownvetch (Coronilla varia L.) developed slowly but also reached high levels. Narrowleaf trefoil (Lotus tenuis Waldst and Kit), and high and low tannin birdsfoot trefoils showed different levels of tannin content, but similar stages of tannin development.