EFFECT OF POTASSIUM APPLICATION AND THE GROWTH OF LEGUMES ON THE ESTABLISHMENT AND PERSISTANCE OF PASTURES IN THE MID-COUNTRY OF SRI LANKA

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It is known that grasses absorb potassium more readily than legumes and that legumes provide beneficial effects for other plants when grown together. Thus it was hypothesized that optimum levels of soil potassium and mixed cropping would give better establishment and persistance of pasture.

An experiment was conducted at Peradeniya where Guinea 'A' (Panicum maximum) was grown in monoculture and with three legumes namely Stylosanthes (Stylosanthes hamata), Centrocema (Centrocema pubescens) and Siratro (Phaseolus atropurpureus) at four levels of potassium (0, 30, 60, 90 K_2O/ha/yr).

The effect of potassium on the establishment and persistance of grass and legumes was sporadic and no significant trend was noted. However a significant effect by legumes was observed. During establishment, although legumes affected significantly on height and leaves/plant of the grass there was no particular trend. However, in all harvests height and leaves/plant of the grass was lowest with Stylosanthes indicating a competitive effect by this legume. Light intercepted by the plant cover at ground level was higher in the grass legume mixture than in the monoculture on the first harvest because of a better cover due to legume growth. In later harvests it was higher in the monoculture than in the mixtures because legume growth was poor.