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COMPANION CROPPING IN THE RAINFED UPLANDS

Intercrops and relay crops have been found to use available light and nutrients more efficiently than sole crops (Suryatna and Harwood, 1976). Well defined intercrops, therefore, result in a 20 to 40 per cent increase in overall productivity over sole crops (Syarifuddin *et al.* 1974). Cassava (*Manihot utilissima* P), which is an ideal long duration crop for the rainfed uplands offers considerable flexibility for intercropping short season crops during the early phases of its growth. The feasibility of raising groundnut (*Arachis hypogaea* L) and horsegram (*Dolichos biflorus* L) as intercrops in cassava was studied in an experiment conducted at the Rice Research Station, Pattambi during 1975-76. The design of the experiment was randomised block replicated 8 times with the following 3 treatments: (i) cassava as sole crop, (ii) groundnut raised as intercrop in cassava and (iii) groundnut and horsegram raised as intercrops in sequence in cassava.

Cassava cv. M_4 was planted at a spacing of 90 cm x 90 cm on ridge in all the 3 treatments on 26, May, 1975. In treatments 1 and 2, groundnut cv. Tmv. 2 was dibbled on both the sides of the ridges adopting a seed rate of 80 kg per ha. After the harvest of groundnut on 25, September, 1975, horsegram was sown broadcast on ridges in treatment 1 and covered by earthing up. Cassava was harvested on 21, July, 1976. A uniform dose of 50 kg each of nitrogen, phosphoric acid and potash was given in 2 equal instalments at planting cassava and at the time of earthing up after the harvest of groundnut. The gross plot size was 4.5 m x 7.0 m. The production of pods in groundnut ranged from 17 to 31 per plant, the average being 21. The total yield of dry pods was 1863 kg per ha in treatment 2 and 1866 kg per ha in treatment 3, the mean of the 2 treatments being 1865 kg per ha. (Table 1). Horsegram sown after groundnut in treatment 3 failed to produce any yield owing to moisture stress conditions in the ridges. The production of tubers in cassava was also affected to some extent due to the failure of the north east monsoon. The mean tuber yield of cassava in the groundnut intercropped plots was 10857 kg per hectare. The sole crop of cassava yielded 10371 kg per ha. The additional production of tuber on account of growing groundnut as a companion crop was 486 kg per ha. The treatment effects were, however, not significant statistically on the production of tuber. The study thus indicated that groundnut could be raised as a companion crop in the marginal uplands where monoculture of cassava is the present rule. Both these crops are ideally suited to the resource pattern of the small farmer.

Table 1 Yield of groundnut and cassava as influenced by cropping pattern (kg/ha)

Crop	Cropping pattern			mean
	Treatment 1 (mono cropping)	Treatment 2 (Companion cropping)	Treatment 3 (Companion cropping)	
Groundnut	...	1863	1866	1865
Cassava	10371	10857	10857	10614

* horsegram failed due to drought.

സംഗ്രഹം

പട്ടാമ്പി നെൽ ഗവേഷണ കേന്ദ്രത്തിൽ 1975 മേയ് മാസത്തിൽ ആരംഭിച്ച ഒരു പരീക്ഷണത്തിൽ നിന്നും ആ പ്രദേശത്തെ കൃഷിയിടങ്ങളിൽ കപ്പയോടൊപ്പം നിലക്കടലയും നടന്നതു് ഗുണകരമാണെന്നു തെളിഞ്ഞു.

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