

## Intercropping in Banana

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A field experiment was conducted in two seasons to find out a suitable intercrop in banana fields of Vaigai-Periyar River Command area. Short duration pulses like greengram increased not only the bunch yield of banana but also gave higher economic returns. Among vegetables, Bhendi was a profitable inter crop.

The present trend in banana cultivation is to grow annual crops like pulses and vegetables as intercrops for better utilization of land, water and labour. The present study was taken up to fix a suitable intercrop in banana under wetland condition in Vaigai-Periyar River command area.

### MATERIAL AND METHODS :

Field experiment was conducted at Agricultural College and Research Institute, Madurai, during 1976-77 and 1977-78 seasons, with local *Monthan* banana variety called as 'Vayal Vazhai'. The banana suckers were planted with a spacing of 1.8 m x 1.8 m. The treatments were, (i) T<sub>1</sub> : Banana alone (Control), (ii) T<sub>2</sub> : Banana intercropped with greengram, (iii) T<sub>3</sub> : Banana intercropped with blackgram, (iv) T<sub>4</sub> : Banana intercropped with onion, (v) T<sub>5</sub> : Banana intercropped with Bhendi, and, (vi) T<sub>6</sub> : Banana intercropped with cowpea. The treatments were tried in randomized block design replicated four times. The intercrops were sown

in lines immediately after planting of banana suckers by adopting a spacing of 25 x 10 cm for both greengram and blackgram; 15 x 15 cm for both onion and cowpea and 45 x 25 cm for bhendi. The recommended fertilizer schedule of 110:35:330 g NPK/plants was adopted for banana. The fertilizer P and K was applied basally and N was applied in two equal splits in 3rd and 5th month after planting. After the harvest of intercrops, soil samples were analysed for available N. Greengram and blackgram were harvested as dry pods. Bhendi and cowpea were harvested as green pods and onion as bulbs

### RESULTS AND DISCUSSION :

The yield of banana was higher in both the season when it was intercropped with greengram and blackgram (Table I.) Raising bhendi, cowpea and onion as intercrops in banana fields did not affect the bunch yield of banana much.

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The available N status in the soil of various treatments (Table I) revealed that in banana + greengram plots, available N was high, followed by Banana + blackgram plots. The increase in available N in greengram and blackgram plots could have caused the increase in the bunch yield of banana in these plots. Greengram and blackgram, being pulses, fixed atmospheric N and supplied part of it to banana. Cowpea, though a legume did not contribute much available N probably because under shaded conditions, nodulation was poor in this crop. This was confirmed with smaller amount of

available N in the soil in new treatment.

#### ECONOMICS :

The data on the economics of intercropping in banana revealed that the net profit/ha (Rs. 8802/ha) was higher in both the seasons when banana was intercropped with greengram followed by banana + blackgram system (Rs. 8091/ha). Banana + bhendi and Banana + cowpea systems gave the next highest net profit of Rs. 7603 and Rs. 7176/ha, respectively. Onion + banana system gave lower net profit compared to pure crop of banana and hence onion appears to be unsuitable as an intercrop in banana.

Table I The yield of banana and intercrops and available N in post-harvest soil (kg/ha)

Treatments	1976-77			1977-78		
	Banana	Intercrops	Available N	Banana	Intercrops	Available N
Banana alone (Control)	11806	...	267.3	13310	...	265.0
Banana + Greengram	12095	597	316.7	14055	585	322.8
Banana + Blackgram	12126	394	287.0	13822	361	321.0
Banana + Onion	11067	1677	272.9	11974	1895	277.1
Banana + Bhendi	11154	3272	267.7	12442	3365	263.1
Banana + Cowpea	10870	3812	282.1	11086	3732	295.2
S. E. (D)	30.97			234.71		
C. D.	65.99			500.17		

Table II. Economics of intercropping in Banana

Treatments	1976-77		1977-78			
	value of Banana + intercrops (Rs/ha)	Cost of culti- vation (Rs/ha)	Net profit (Rs/ha)	Value of Banana + intercrops (Rs/ha)	Cost of culti- vation (Rs/ha)	Net profit (Rs/ha)
Banana alone (Control)	11806.00	5410.00	6396.00	13310.00	5607.50	7702.50
Banana + Greengram	13886.00	5944.00	7942.00	15810.00	6147.50	9662.50
Banana + Blackgram	13308.00	5944.00	7364.00	14965.00	6147.50	8817.50
Banana + Onion	12408.60	6345.00	6063.60	13390.00	6557.50	6832.50
Banana + Bhendi	13117.20	6085.00	7032.20	14461.00	6287.50	8173.50
Banana + Cowpea	13157.20	5959.00	7198.20	13325.20	6170.50	7154.00

Cost of Banana @ Rs. 1.00/kg	Cost of Onion @ Rs. 0.50/kg
Cost of Greengram and Blackgram @ Rs. 3.00/kg	Cost of Bhendi (Greens) and Cowpea (Greens) @ Rs. 0.60 / kg