planting and seedling broadcast was comparable (4.4 t ha^{-1}) but maximum benefit-cost ratio of 3.01 was realised under seedling broadcost method which might be due to the reduction on the cost of labour for planting. Under this method only 1/3 of the labour was utilised (160 man hours) as compared to line planting (480 man hours) and random planting utilised 320 man hours.

During *kuruvai* 96 the experimental data revealed that significantly higher grain yield of 6.9 t/ ha was recorded by ADT 36 followed by ASD 18 (6.2 t ha^{-1}). The grain yields with random planting and seedling broadcost were on par. There was no significant difference in the straw yield of the varieties tested. Sometimes transplanting delayed by labour shortage lowered the rice yield (Pyarelal *et al.* 1982). The various method of planting has also not influenced the straw yield significantly. There was a labour saving of 2/3 by seedling broadcast method of rice planting. At Coimbatore, studies revealed that there was a considerable saving in labour for planting due to seedling broadcast method in addition to increased grain yield. Maximum benefit-cost ratio of 3.26 was obtained with seedling broadcast method followed by random planting (3.14)

Pooled analysis

In general the data on growth and yield characters by pooled analysis showed that there was no significant influence due to various method of planting on the growth and yield of rice varieties tested in the experiment. But the number of tillers was significantly influenced by the various method of planting and the number of grains/panicle by the different varieties tested.

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Effect of micronutrient fertilization on brinjal fruit yield in an alfisol

D. SELVI AND RANI PERUMAL

Department of Soil Science and Agricultural Chemistry, TNAU, Coimbatore - 641 003, Tamil Nadu

Abstract : The soil application of microfood / straight micronutrients recorded higher brinjal fruit yield compared to the foliar application. The highest fruit yield was recorded by the combined application of stanes microfood (soil), composted coirpith and Azospirillum. The yield increase was 20.0, 25.6 and 32.1 per cent over NPK respectively for the application of stanes microfood (soil applied) with NPK / SMF with NPK + CCP / MF with NPK + CCP + Azo. The application of NPK alone recorded a lower yield of 174.4 g $plant^{-1}$ and the control recorded the lowest yield of 159.0 g $plant^{-1}$.***(Key words** : Micronutrients, Composted coirpith, Azospirillum, Red non-calcareous soil, Brinjal, Fruit yield).*

Brinjal is one of the most important commercial vegetable crops grown all over India for its highly nutritive value and remunerative price. Among the various production technologies, nutrition is found to exert a great influence on growth and yield. In different components of the human balanced diet, vegetables occur the prime place in predominantly vegetarian country like India. India is second only to China in vegetable production. It can be said that N, P, K fertilisers alone connot meet the projected demand of 134 million tonnes of vegetables beyond 2000 AD. Application of micronutrients which improve the chemical composition of fruits and general condition of plants has produced marked increase in yield of vegetables. There is lack of research based information on the effect of micronutrients alone particularly with / without bio softwares. Thus, the present study was carried out in a red non- calcareous soil on brinjal.

Materials and Methods

The pot culture experiment was conducted in the green house of the Department of Soil Science

Table 1. Physico - chemical properties of Red-non calcareous soil

Particulars	Content
Physical constants	
Apparent specific gravity (Mg m^{-3})	1.32
Absolute specific gravity (Mg m^{-3})	2.12
Pore space (%)	40.96
Maximum water holding capacity (%)	40.64
Volume expansion on wetting (%)	18.67
Electro-chemical properties	
Soil reaction (pH)	6.8
Electrical conductivity (dSm^{-1})	0.22
Chemical properties	
Cation exchange capacity (cmol (p+) kg^{-1})	18.6
Organic C (%)	0.34
$KMnO_4$ (kg ha^{-1})	204.0
Olsen-P (kg ha^{-1})	10.2
NH_4OAc-K (kg ha^{-1})	220.0
DTPA-Zn (ppm)	0.96
DTPA-Cu (ppm)	1.04
DTPA-Fe (ppm)	5.86
DTPA-Mn (ppm)	12.90
Soil series	Irugur
Soil texture	Loamy sand
Taxonomy	Udic Haplustalf

Table 2. Microfood with / without composted coirpith and Azospirillum on brinjal fruit yield (g palnt $^{-1}$)

S.No.	Treatments	Fruit yield (g $plant^{-1}$)
1.	Absolute control	384.2
2.	NPK alone	487.8
3.	NPK + MNS (S)	556.7 (14.1)
4.	NPK + MNS (F)	552.0 (13.2)
5.	NPK + CCP + MNS (S)	598.2 (22.6)
6.	NPK + CCP + MNS (F)	591.6 (21.3)
7.	NPK + CCP + Azo + MNS (S)	624.7 (28.1)
8.	NPK + CCP + Azo + MNS(F)	618.4 (26.8)
9.	NPK + SMF (S)	585.2 (20.0)
10.	NPK + SMF (F)	582.8 (19.5)
11.	NPK + CCP + SMF (S)	612.7 (25.6)
12.	NPK + CCP + SMF (F)	606.4 (24.3)
13.	NPK + CCP + SMF (S) + Azo	644.2 (32.1)
14.	NPK + CCP + SMF (F) + Azo	642.8 (31.8)
	CD (p=0.05)	6.48

Figures in parantheses are per cent increase over NPK alone.

in enhancing to enzyme and photosynthetic activities, accumulation of photosynthates thereby, higher yields. The beneficial effect of Mn and Cu in SMF might be associated with their role in nitrogen nutrition, photosynthetic activity and carbohydrate metabolism.

This could also be viewed that the foliar spray in Alfisol as short term effect since the foliar sprays were given only at critical stages and the micronutrients through microfood supplied would not have been effectively absorbed and transported to growing tissues of fruits and leaves (Palanivel and Ramanathan, 1992). The integration of both CCP and Azospirillum with microfood brought about much greater benefit in terms of fruit yield. The favourable C: N ratio and appreciably higher contents of nutrients and their ready availability due to its prolonged period of composting could be the possible reasons for its spectacular increase on fruit yield. (Darley Jose *et al.*, 1986). The additive effect of Azospirillum on yield might be not only due to fixation of N but also due to increased activity of hormones which would have had a positive influence on the physiological activity of the plants. (Thamburaj, 1991).

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Genotype x environment interaction in castor

P. MANIVEL AND H.S. JAVAD HUSSAIN
Oilseeds Research Station, TNAU, Tindivanam - 604 002, Tamil Nadu

Abstract : The phenotype stability of 79 genotypes of castor (60 hybrids and 19 parents) grown over four environments was studied for oil content, seed yield and other related traits. Variance due to genotypes, environments, G x E (liner) components was highly significant for all the traits. However, the liner component was more than the non-liner component except for capsules per plant and 100 seed weight. In general hybrids showed greatest stability for all the traits. The traits like number of nodes up to primary raceme, 100 seed weight and oil content were less affected by the changing environments on the other hand, substantial fluctuations due to change of environments was observed for plant height, length of primary raceme, number of capsules and seed yield per plant. The hybrids JP 65 x RC 1226, 240 x USSR2, LRES 17 x JH 120, LRES 17 x SH 63, and 240 x Salam local were considered to be superior and stable over environments. ***(Key words** : Castor, Ricinus communis, Phenotypic stability).*

Castor is one of the important non-edible oilseeds, having wider utilization in many commercial trades like pharmaceutical, soap, paint and lubricant industries, besides having many other uses. Quite often yield fluctuations hamper the growth of castor economy. Yield fluctuation results from sensitivity of crop to the environmental changes. Use of stable variety or hybrid may overcome this problem to a