

NON-LIVING

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India produced about 30,000 tonnes of black pepper during 1947 and accounted to nearly 80% of the world production. Since then the world production of pepper has increased from 38,000 tonnes to about 1,42,820 tonnes during 1978-79 (Anonymous, 1980). Brazil, Malaysia and Indonesia in that order are the major pepper producing countries at present, and India's contribution to the total world production is only 19.4%. The present average yield of pepper in this country is about 233 kg. per hectare in contrast to about 3,455 kg in Malaysia, 3,333 kg in Brazil and 641 kg in Indonesia (Anonymous, 1980). At the present recommended rate of 1,100 vines per hectare, this works out to only 200 g/vine.

The comparative high yield obtained in other major pepper producing countries have been attributed to favourable agro-climatic conditions, mainly with uniform distribution of rainfall (de Waard, 1969), improved agro-techniques, varieties with very high yield potential, use of non-living standards, and very close spacing adopted. The most common support for training pepper used in Kerala which accounts for 96% area under pepper is *Erythrina indica*, a leguminous thorny tree. *Garuga pinnata* is also used in southern parts of Kerala. These standards are fast growing heavy feeders and *Erythrina indica* sheds leaves during summer, and hence does not provide shade to vines, when actually needed. Pepper vines invariably grown

on live standards will have to compete with the standards for plant nutrients and soil moisture. Recently *Erythrina indica* has also been found to be an alternate host for root-knot nematode, *Radopholus similis* (Koshy, Susamma and Sundraraju, 1977).

A field trial was undertaken at CPCRI Regional Station Farm at Peruvannamuzhi to compare the advantages of growing pepper on non-living, dead and live standards. Reinforced cement concrete, granite and teak posts were used as non-living/dead standards. *Erythrina indica* and *Garuga pinnata* were used as the living standards. The height of the standards were restricted to 3m from the ground level in all the cases. Three popular cultivars of pepper namely Panniyur-I, Karimunda and Kalluvally were used at two spacings (3x2 and 3x3m). A strip-plot design was adopted with standards in one strip and cultivar x spacing combination in the perpendicular strip. A gross plot size of either 16 or 18 vines with a net plot size of 4 vines per treatment were used. The experiment was replicated four times. Since the establishment of Kalluvally was poor, the yield data of this was not included for discussion. The plots received recommended dosages of fertilizers, plant protection measures and cultural practices. The flowering commenced in the year 1978. The weight of green berries obtained in the year 1981 are presented in Table I. The yield represents only 70% of the vines which have come to bearing.

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Mean yields of Panniyur-I and Karimunda with two spacings and grown on five standards in quintals per hectare.

Spacing	Variety	Standard					Spacing mean	Variety mean
		Erythrina indica	Garuga pinnata	RCC posts	Concrete pillars	Teak poles		
3 x 2 m	Panniyur-I	7.31 (439)	8.33 (500)	17.73 (1064)	16.28 (1019)	23.64 (1419)	15.32	10.61
	Karimunda	11.23 (674)	7.63 (458)	19.08 (1145)	20.36 (1234)	20.70 (1242)		
3 x 3 m	Panniyur-I	5.06 (455)	4.09 (368)	8.69 (782)	6.88 (619)	7.81 (703)	8.51	13.20
	Karimunda	6.19 (557)	4.54 (409)	17.49 (1574)	16.02 (1442)	8.36 (752)		
Standard mean		7.45	6.14	15.75	15.11	15.13		

Figures in parenthesis denote the mean yield per vine in grams.

From the Table it could be seen that the performance of black pepper on non-living standards has been comparatively far better than their performance on living/dead standards. The yield increase of pepper vines on dead or non-living standards was about two-fold than that obtained from living standards. However, within each category of standards (ie. within living and within non-living) there was difference in yield. Among the spacing, it was observed that 3 x 2 m was superior obviously due to more number of vines per hectare.

Though the cost economics of growing pepper on non-living standards are yet to be worked out, it was found that while the cost of one *Erythrina* or *Garuga* post was about Rs. 2/-, in the case of non-living standards it was between Rs. 30/- and Rs. 50/-. Hence, the initial establishment cost is considerably high. However, the advantages are that the yield increase is likely to offset the initial cost of establishment within a few years and the

REFERENCES

- Anon. (1980). Cocoa, arecanut and spices statistics for 1969-80. Directorate of Cocoa, Arecanut and Spices Development, Ministry of Agriculture, Govt. of India, Calicut, pp 36.
- Koshy, P. K., Sosamma, V. K. and P. Sunderaraju (1977). Screening of plants used as pepper standards against root knot nematode. *Indian Phytopath.* 30: 128-129.
- Swaminathan M. S. (1978). Proceedings of the National Seminar on pepper at Calicut (1977) 1-3 (Ed. M. K. Nair and M. Haridasan), CPCRI Kasaragod 670 124, Kerala.
- Waard, de P. W. F. (1969). Foliar diagnosis nutrition and yield stability of pepper. (*Piper nigrum L.*)