

Nene and Sheila (1994) reported for the first time the use of tapioca as a substitute for agar in microbiological media. Tapioca-based media can be used not only for routine culture of fungi but also in seed pathology, selective isolation of fungi, and evaluation of fungicides. Attempts are being made to replace agar with granulated tapioca in tissue culture media for callus initiation of chickpea and pigeonpea.

References

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Pigeonpea

Socioeconomics

Adoption of Maruti (ICP 8863) – A Case Study

T G Shanower, T G Kelley, Y Mohan Rao, and M A Ghaffar (ICRISAT Asia Center)

Maruti (ICP 8863) is a medium duration, wilt resistant pigeonpea cultivar, originally released for cultivation in Karnataka, India, in 1986, but now widely grown in the core pigeonpea production zone of south India (REIA 1994). Farmers' pest management practices and perceptions were surveyed in this region as part of an on-farm pest management project. Several interesting insights about Maruti and why it has been so widely adopted emerged from these surveys.

The surveys were conducted in Marepalle village, 16 km from the town of Tandur in Ranga Reddy District, Andhra Pradesh. The village is located within the large pigeonpea producing region of northern Karnataka, southern Maharashtra and western Andhra Pradesh. Thirty-four of the 289 households listed in the Revenue Office records for Marepalle were selected for the study.

The sample included a cross-section of small and large farmers. Detailed results of the survey are currently under preparation.

Prior to 1988, farmers in Marepalle grew only two pigeonpea cultivars, one red and the other white-seeded. The white-seeded cultivar (probably BDN-1) was by far the most popular. It was grown by more than 90% of farmers with 41% growing this cultivar exclusively, and the rest growing both cultivars. In earlier years, the red-seeded cultivar was more commonly grown but farmers shifted from red- to white-seeded cultivars because of higher yield, larger grain size, and a higher market price. Traders and dhal mill owners pay a premium price for large, white-seeded pigeonpea because this produces a brighter dhal which can be sold at a higher price (Parthasarathy Rao et al. 1991).

Currently, no one in Marepalle is growing either of the formerly popular cultivars. These have been completely replaced by Maruti, first introduced into this village in 1988. Maruti was quickly adopted and is now being grown by 100% of the farmers in this village (Fig. 1). This demonstrates that farmers in the semi-arid tropics are not averse to change and will quickly adopt new technology, provided the technology has clearly perceptible benefits and is not overly risky.

Interestingly, Maruti replaced previously grown cultivars even though one of them, the white-seeded pigeonpea, had several preferred qualities (Table 1). Almost half of the farmers (42%) said the white-seeded cultivar has higher yield potential than Maruti. More than 80% of the respondents (60% of females and 46% of males) prefer-

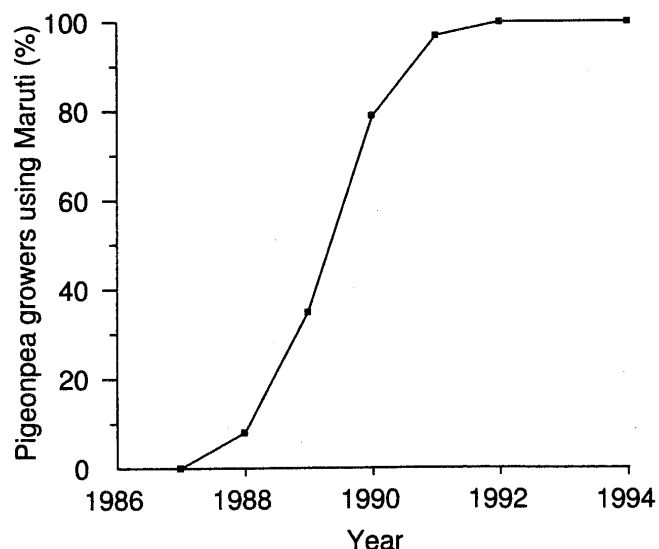


Figure 1. Adoption of Maruti (ICP 8863) pigeonpea cultivar in Marepalle village, Andhra Pradesh, India.

Table 1. Preferences for two pigeonpea cultivars in Marepalle, Andhra Pradesh, India.

Characteristics	Percentage of respondents indicating a preference for		
	Local white	ICP 8863	No preference
Yield potential	42	29	29
Wilt resistance		100	
Insect resistance	21	79	
Dhal recovery rate	19 (M)* 30 (F)	26 (M) 20 (F)	55 (M) 50 (F)
Taste	46 (M) 60 (F)	48 (M) 33 (F)	6 (M) 7 (F)
Cooking time		100	
Seed color	68 (M) 63 (F)	32 (M) 37 (F)	
Seed shape	58	12	30
Seed size	53	29	18
Market price	85	6	9

*Male (M) and female (F) responses disaggregated only where preferences differed.

red the taste of the white-seeded dhal to the Maruti dhal. In addition, 85% of the respondents said that the white-seeded pigeonpea receives a higher price (400-500 Rs. t^{-1} ; US\$ 12.6-16 t^{-1}) in the local market, confirming the findings of Parthasarathy Rao et al. (1991). A majority also preferred the white-seeded cultivar for seed color, shape, and size.

Three factors contributed to the rapid and complete substitution of Maruti for the previously grown cultivars (Table 1). The first and most important is its wilt resistance. Virtually all the farmers in the survey recognized Maruti as wilt resistant, whereas the other two cultivars were susceptible. Wilt had been the major production constraint in the region, and the introduction of this cultivar effectively solved this problem. The second factor relates to cooking time. All respondents and their spouses felt that less cooking time was needed for Maruti than for the white seeded type. This was an important consideration contributing to the widespread preference for this cultivar. The third factor is the perception that Maruti is less, or at least no more, susceptible to insect pests than the white-seeded cultivar. One fifth of the respondents felt it is less susceptible to *H. armigera* than the local cultivar while the remainder said both varieties are equally susceptible. Taken together these factors led to

the total adoption of Maruti in Marepalle over the relatively short period of five years (Fig. 1).

The rapid and widespread adoption of Maruti throughout this region (REIA 1994) probably aided the expansion of pigeonpea area in the region. In Marepalle, all households surveyed currently grow more pigeonpea than they did 15 years ago. Pigeonpea production has evolved from a largely subsistence to a highly commercialized activity. Indeed, about 40% of agricultural income in Marepalle is derived from pigeonpea sales. This data comes from 1992-93 when pigeonpea was devastated by *H. armigera*, and hence production was low. Pigeonpea probably accounts for a higher percentage of agriculture-related income in normal years. The availability of wilt resistant pigeonpea cultivars was identified by every farmer as an important reason for increasing the area under pigeonpea. Pigeonpea price increases, greater access to markets, and the availability of chemicals to control insect pests were other important factors cited.

References

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Cost of Hybrid Seed Production in Pigeonpea

R Ravikesavan, R Rathnaswamy, and
T Kalaimagal (Department of Pulses, Tamil
Nadu Agricultural University, Coimbatore
641 003, India)

Three pigeonpea hybrids have been released in India: ICPH 8 from ICRISAT, CoH 1 from Tamil Nadu Agricultural University, and PPH 4 from Punjab Agricultural University. Since no information on the cost-benefit ratio in hybrid pigeonpea seed production is available, this study was taken up.

Coimbatore pigeonpea hybrid, CoH 1, was selected for the study. The parents of this hybrid, ms T 21 and ICPL