

Awareness and Adoption of Recommended Technologies by Cassava Growers

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Introduction

Cassava is an important tuber crop in India grown in 2.7 lakh hectares area and the production is 71 lakh tonnes. The average yield of cassava is 22 tonnes per hectare. Cassava is a rich source of starch (25 to 35 percent) mainly processed for starch and sago. In India, the major cassava growing states are Kerala and Tamil Nadu. Cassava is an industrial crop of Tamil Nadu and occupies 22082 ha of area with a production of 3797910 tons (Hort.Stat- 2006). The major traditional cassava growing districts are Salem, Namakkal, Erode, Cuddalore, Dharmapuri and Kaniyakumari mostly as rainfed. Among the Districts, Salem District stands first in area, production and productivity. The number of factories in Salem district alone is 650. It is estimated that 60 percent of the starch produced in India is from Salem district.

Due to ease in cultivation, drought tolerance and rise in prices of tubers, the area under cassava is on the increase in other districts of Tamil Nadu viz., Erode, Trichy, Coimbatore. Though the area is increasing, the production is not sufficient to meet the demand of the food and textile industries.

Though farmers are cultivating cassava in a larger area the method of cultivation is poor. Scientists are developing a number of varieties, new improved technologies etc., however the knowledge and adoption of recommended practices were found to be least.

It has been well demonstrated by the research system through its out reach programmes that yield of cassava could be boosted to a level of 35 tonnes per hectare in the farmer's field if farmers adopt the recommended practices.

Hence, there is an urgent need to channelise our efforts to increase the cassava yield in farmer's field to achieve the targeted yield. In view of this, a study to assess awareness and adoption of recommended technologies may be useful to generate technologies and to design promotional strategies.

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Methodology

The study area considered for this project is Salem District. There are 9 taluks and 20 blocks in Salem district. Based on the maximum area under cassava, Attur taluk was selected. From Attur taluk two blocks namely Attur and Pethanaikenpalayam were selected and from the selected blocks, 3 villages/block were selected based on maximum area. These villages are viz., Manjini, Mullaivadi, Ammampalayam, Ramanaiken Palayam, Veeragoundanur, and Chelliyam Palayam. In each village, 10 cassava farmers were selected randomly. Thus a total number of 60 farmers were selected as respondents for the study. An interview schedule was constructed, pre tested and finalized and used for collecting data from the respondents. Relevant data pertaining to the study was collected, analyzed using percentage analysis, interpreted and meaningful conclusions were drawn.

Results and Discussion

The distribution of respondents based on the awareness and adoption of recommended technologies in cassava is presented in the Tables 1 to 4.

Table-1. Distribution of Respondents according to their Awareness and Adoption of Recommended Season and Varieties in Cassava

(n60)

Recommended Technologies	Awareness		Extent of adoption	
	No.	Per cent	No.	Percent
Season	60	100.00	60	100.00
H226	60	100.00	60	100.00
Kunguma Rose	60	100.00	53	88.33
MVD 1	57	95.00	57	91.66
CO2	53	88.33	47	78.33
CO3	51	85.00	44	73.33
CO(TP)4	36	60.00	29	48.33
CO(TP)CTCRI 5	21	33.33	6	10.00

The season for irrigated cassava is December-January and for rainfed cassava it is September. The respondents very well know the season based on their experience and it was adopted by all the farmers. Among the different varieties grown in the study area H226, MVD-1, Kunguma Rose, were known and adopted by a majority of the cassava farmers and found to be preferred varieties for cultivation. Most of the farmers expressed

that H226 recorded the highest starch content of 27 per cent and under rainfed condition, H226 performed well with higher yield and starch content. This might be the reason for higher adoption.

Among the varieties released by Tamil Nadu Agricultural University, CO2 and CO3 were known by more than 85.00 per cent of the farmers and adopted by more than 70.00 per cent.

The newly released TNAU varieties like CO (TP) 4 and CO (TP) CTCRI 5 were known by 60 per cent and 33.33 per cent respectively. These were adopted by only 48.33 and 10 per cent of the respondents. The poor adoption is due to lack of awareness and non availability of planting materials.

Table 2. Distribution of Respondents according to their Awareness and Adoption of Nursery Techniques

(n=60)

Recommended Technologies Nursery Techniques	Awareness		Extent of Adoption	
	No.	Per cent	No.	Percent
Use of 2 or 3 budded setts	60	100.00	60	100.00
Raising nursery	34	56.66	28	46.66
Sett treatment with KCl	41	68.33	32	53.33
Sett treatment with bio-fertilizers	34	56.66	16	26.66
Sett treatment with fungicides	37	61.66	22	36.66
Spacing	52	86.66	52	86.66
Maintenance of optimum population	48	80.00	48	86.66

The cassava cultivators had known many varieties and the extent of adoption of such varieties varied depending upon the availability of setts. all the farmers adopted 2 or 3 budded setts for planting. One of the important technologies in cassava cultivation is raising nursery before transplanting in main field to eliminate virus affected setts. Due to medium awareness (56.66 per cent) on the advantage of raising nursery the farmers raise nursery (46.66 per cent) just for gap filling in the main field. The sett treatment with Kcl, bio-fertilizers, fungicides was adopted by 26.66 to 53.33 per cent of the farmers. Spacing and maintenance of optimum plant population were important practices of which farmers were aware and adopted by more than 80 per cent of the farmers.

Table 3. Distribution of Respondents according to their Awareness and Adoption of Crop Management

(n60)

Recommended Technologies Crop Management	Awareness		Extent of Adoption	
	No.	Per cent	No.	Percent
Farmyard manure	60	100.00	50	83.33
N as basal application	60	100.00	40	66.66
P as basal application	60	100.00	44	73.33
K as basal application	60	100.00	38	63.33
N as top dressing on 90th day	16	26.66	12	20.00
K as top dressing	22	36.66	18	30.00
Micronutrients application	37	61.66	30	50.00
Inter crop	60	100.00	60	100.00
Weed management				
Cultural method	60	100.00	60	100.00
Herbicide application	40	66.66	11	55.00
Water management	60	100.00	58	96.66

Fertilizer application is one of the important package of practices in cassava. The awareness about manures, fertilizers, their dosages and its application and extent of adoption are seen in table 3. It is observed that 100 per cent of the farmers had known about the application of FYM, N, P and K fertilizers. However, the adoption is varied, ranging from 60 to 80 per cent. Most of the farmers raised cassava under rainfed condition and the farmers had their own doubts regarding the survival of the crop at its initial stages. The rain in early phase of the crop decides the survival of the crops itself. They fear that application of fertilizers at this stage would harm the crop and if the crop did not survive, application of fertilizers become unwarranted.

Thus, considerable gaps between the application of N, P and K by the farmers and the recommended dosage suggested by scientists were observed. Majority of the farmers were not aware of the recommended top dressing of urea and potassium on 90th day . About 25-35 per cent of the farmers were aware and only 20 to 30 per cent of farmers adopted the same.

From the third month onwards tuber formation occurs in cassava. At that time fertilizers as top dressing are essential for better growth and tuber formation. Many farmers expressed that if they applied urea as basal and top dressing the shoot growth would be more and tuber formation would be reduced. Another reason they expressed was that there would be more weed growth, so they avoid the fertilizer application.

Most of the farmers (61.66 per cent) were aware of micronutrient application. However, the adoption was only by half of the respondents (50 per cent). This is, due to a misconception between the micronutrient deficiency symptom and virus disease symptom among the farmers. Therefore, creation of awareness is very important.

Intercrops like black gram, green gram, beans were known and adopted by cent per cent of the farmers. In weed management, 100 per cent of the farmers adopted the cultural method of weed control practices and more than 65 per cent of the farmers were aware about herbicide application, the adoption being 55 per cent. Irrigation is very important for crop growth. All the farmers are aware of water management and 96.66 per cent adopted the same.

Table 4. Distribution of Respondents according to their Awareness and Adoption of Plant Protection Practices

(n60)

Recommended Technologies Plant Protection Practices	Awareness		Extent of Adoption	
	No.	Per cent	No.	Percent
Use of disease free setts	60	100.00	44	73.33
Application of Dimethoate and neem based chemicals to control whitefly	24	40.00	20	33.33
Application of dicofol to control red spider mite	28	46.66	25	41.66
Use of dithane M45 to control phomopsis	27	45.00	22	36.66
To control tuber rot				
a. Use of <i>T. viride</i>	33	55.00	15	25.00
b. Following crop rotation	60	100.00	51	85.00
c. Proper drainage	57	91.66	74	75.00
Timely harvest	60	100.00	60	100.00

Use of disease free setts, crop rotation, drainage and timely harvest were known by cent per cent of the farmers, with the adoption also ranging from 70-100 per cent. In the control of white fly and red spider mite the extent of awareness among farmers was 40-46 per cent. However, their adoption was poor, ranging from 30 to 40 per cent. In disease management practices, to control phomopsis, awareness was 45 per cent and the adoption is 36 per cent. In the control of tuber rot, awareness on proper drainage methods was by 91.66 per cent of the farmers and adoption by 75 per cent of the farmers. The use of *Tricoderma viridi* was known by 55.00 per cent and adopted by only 25.00 per cent of the farmers.

The reasons attributed to such gaps are that the farmers experienced serious yield loss due to pest and disease attack especially the occurrence of tuber rot and mosaic virus which was either unnoticed or there was lack of awareness that these pests and diseases would significantly influence the yield loss.

Conclusion

It can be concluded that there was low awareness on and adoption of TNAU varieties, Nursery techniques, sett treatment methods, top dressing on 90th day, micronutrient application and management of CMVD & Tuber rot among cassava growers in the study area. Hence, popularization of TNAU varieties through various extension methods and creation of awareness on the above recommended technologies through frequent training cum demonstration programmes is essential. Large scale production and distribution of quality planting material of cassava also facilitate easy adoption of the technologies. Development of Cassava mosaic disease resistant, short duration varieties with high starch content for industrial utilization has to be given importance to meet the industrial needs of cassava.

References

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