farmers who were low in these characteristics (vide Table-1) naturally would be low in their extent of adoption of use practices. This is how the difference between the two types of respondents in their extent of adoption of use practices as seen would have been emerged. This finding derives support from that of Thangaraj (1995).

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# REASONS FOR NON-ADOPTION OF LOW COST TECHNOLOGIES IN PADDY

V. KRISHNAKUMAR, P. ATHIMUTHU and C.KARTHIKEYAN

Tamil Nadu Agricultural University
Coimbatore-641 003.

## ABSTRACT

A study was conducted with a sample of 100 farmers selected randomly from Trichy district. Farmers extent of adoption and reasons for non-adoption of Low Cost technologies (LCTs) in paddy were studies.The results indicated that majority of the farmers had medium level of adoption of LCT in paddy and the major reasons for non-adoption were non-availability of resources, lack of awareness, lack of knowledge on LCTs and non-availability of skilled labour.

KEY WORDS : Low cost technologies,Extent of adoption, Reasons for non-adoption, paddy growers.

The development agriculture is primarily due to the application of science and technology and making the best use of available resources. Several attempts have been made in this direction to increase the yield of food crops in India. But only after 1966, a new era had begun in Indian agriculture with significant advance in technology such as cost reduction (or) non-monetary inputs (or) cost technology.

Rice is the staple food for more than 75 per cent of the people in Asia. In Tamil Nadu, rice was grown in 23.38 lakh ha.with a production of 75.06 lakh m.ton. during 1994-95. The rice farmers increased the rice production steadly by adopting new and improved technologies. Any technology which involves cost reduction in the application of input are called are Low Cost technologies (LCTs). Though the LCTs are being recommended for increasing production at reduced cost, it is not known whether the same has reached all the categories of farmers, accepted and adopted as part of their farming. Hence the present study was taken up with the following objectives. 1. To find out the extent of adoption of LCTs by farmers in paddy. 2. To find out the reasons for non-adoption of LCTs in paddy.

Table 1. Distribution of respondents based on the extent of adoption of LCTs in rice cultivation

(n=100)

| Sl.No. | Category | Number | Percent |
|---|---|---|---|
| 1. | Low | 23 | 23.00 |
| 2. | Medium | 65 | 65.00 |
| 3. | High | 12 | 12.00 |

## MATERIALS AND METHODS

The study was undertaken in three randomly selected villages of Lalgudi block, Tiruchirappally district in Tamil Nadu. Considering the maximum area under paddy in wetland cultivation the sampling process was carried out. Proportionate random sampling techniques was adopted to select the respondents at villages were included in the study. Totally 17 LCTs were identified in paddy through review of literature. These technologies were administered to a group of 30 judges.Opinion drawn from the Department of Agronomy and Agricultural Extension. They were asked to evalvate each of the technologies on a three point continuum *viz.*, Will reduce the cost definitely? Will reduce the cost to some extent? and Will not reduce the cost? The responses were quantified by giving score of 2,1 and 0 respectively. All the technologies with average mean score exceeding 1.39 were selected and thus 11 LCTs were finally selected and the extent of adoption of the respondents was determined with reference to these 11 LCTs in paddy. Percentage analysis was done to quantify the responses on non-adoption of LCTs in paddy.

## RESULTS AND DISCUSSION

### Extent of Adoption

From the persual (Table 1) it could be observed that nearly two-thirds of the rice growers (65.00 per cent) belonged to medium adopters category followed by low adopters to the extent of 23 per cent and the rest 12 per cent fell under high level of adopters. These results may probably be due to their attitude towards the scientific orientation, and frequent contact with the extension agency at the village level. These results are in comformity with the findings of Jayaraman (1988) and Sathiyanarayanan (1991).

### 2. Reasons for Non-adoption of Low Cost Technologies as perceived by the rice Growers

The reasons for non-adoption need attention of scientists and are presented in Table 2. The major reasons attributed by the farmers for non-adoption of the optimum seed rate was to maintain optimum plant population (92.68 per cent the reasons given by 87.80 per cent of them was to avoid scarcity of seedling for the non-adoption of optimum seed rate. It has been found that 88.67. per cent of the non-adopters stated that the non-availability azospirillum of in agricultural input centres was the main reason for non-adoption. The major reason like untimely supply of azospirillum was expressed by 73.58 per cent of respondents. The other reason like ignorance about practice was expressed by 72.22 per cent of farmers. All the non-adopters have stated that non-availability of Zinc sulphate at right time as the major constraint for non-adoption, whereas 66.66 per cent have reported the reasons like not aware and lack of adequate knowledge about the nutrient as the reasons for non-adoption. All the respondents reported lack of knowledge about DAP application for their non-adoption. The other reason like not necessary to apply and ineffectiveness of DAP in the order expressed by the respondents to the extent of 66 per cent and 50 per cent respectively. The reason by respondents for not applying the fertiliser based on soil test were delay in getting results (96.77 per cent) lack of knowledge (85.48 per cent) and more risk (77.41 per cent) to understand the recommendation. The reason reported by majority of rice (77.41 per cent) to understand the recommendation. The reason reported by majority of rice farmers for non-adoption of BGA were not timely available (94.80 per cent)ineffective (90.90 Per cent) and no difference in yield (87.01per cent). A majority (88.23 per cent) of rice growers reported adulteration as the reason for not using the neem cake followed by lack of knowledge in using of neem cake(82.35 per cent). The reason for not applying the nitrogenous fertilizer in split doses were lack of knowledge about split application (100.00 per cent). lack of information (70.00 per cent) and lack of credit facilities (50.00 per cent). While analysing the reasons for not applying the neem based pesticides it has been found that majority of rice farmers (88.88 per cent) perceived reduction in vigour of pests due to prophylatic measures. The reasons attributed by the majority of the farmers for not taking up weeding were non-availability of

**Table 2. Reasons for non-adoption of the low cost technologies as perceived by the paddy growers**

| S.No. | Reasons for non-adoption | Number | Percent |
|---|---|---|---|
| **A** | **Use of optimum seed rate** | | |
| 1. | Not sufficient to maintain Optimum population | 38 | 92.68 |
| 2. | Low in germination percentage | 15 | 36.58 |
| 3. | To avoid scarcity of seedling | 36 | 87.80 |
| **B.** | **Treating the seeds with Azospirillum** | | |
| 1. | Not available in agricultural department | 47 | 88.67 |
| 2. | Untimely supply | 39 | 73.58 |
| 3. | Now aware of the practice | 15 | 28.30 |
| **C.** | **Treating seeds with fungicides** | | |
| 1. | Following of traditional practices for seed production | 15 | 83.33 |
| 2. | Not aware of the practice | 13 | 72.22 |
| 3. | Lack of knowledge | 8 | 44.44 |
| **D.** | **Zinc sulphate application** | | |
| 1. | Non-available in proper time | 7 | 100.00 |
| 2. | Not aware of the technology | 4 | 66.66 |
| 3. | Lack of knowledge | 4 | 66.66 |
| **E.** | **Application of DAP to nursery** | | |
| 1. | Lack of knowledge | 12 | 100.00 |
| 2. | Not necessary to apply | 8 | 66.66 |
| 3. | Ineffective | 6 | 50.00 |
| **F.** | **Soil test based fertiliser application** | | |
| 1. | Delay in getting result | 60 | 96.77 |
| 2. | Lack of knowledge | 53 | 85.48 |
| 3. | More risk | 48 | 77.41 |
| **G.** | **Bio-fertilizer BGA application** | | |
| 1. | Not timely available | 73 | 94.80 |
| 2. | Ineffective | 70 | 90.90 |
| 3. | No difference in yield | 67 | 87.01 |
| **H.** | **Use of nitrogen inhibitors** | | |
| 1. | Adulterated neem cake | 30 | 88.23 |
| 2. | Lack of knowledge | 28 | 82.35 |
| 3. | Not available in time | 10 | 29.41 |
| **I.** | **Split application in nitrogenous fertiliser** | | |
| 1. | Lack of knowledge | 10 | 100.00 |
| 2. | Lack of credit | 5 | 50.00 |
| 3. | Lack of information | 7 | 70.00 |
| **J.** | **Need based pesticide application** | | |
| 1. | Reduction in vigour of pests through Prophylactic measures | 48 | 88.88 |
| 2. | Technical difficulty | 40 | 74.07 |
| 3. | Lack of experience | 33 | 61.11 |
| **K.** | **Weeding at critical stages** | | |
| 1. | Lack of skilled labour | 14 | 93.33 |
| 2. | More risk | 19 | 66.66 |
| 3. | Lack of credit | 9 | 60.00 |

skilled labour (93.33 per cent), more risk (66.66 per cent) and lack of credit (60.00 per cent) respectively.

The study revealed that majority of the farmers adopted the LCTs of paddy at medium level. Majority of the farmers perceived that lack of awareness, lack of knowledge, non-availability of inputs/resources in time and non-availability of skilled labour as the reasons for non-adoption of LCTs in paddy by the farmers.


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# SURVEY OF ARBUSCULAR MYCORRHIZAL ASSOCIATION OF *Casuarina equisetifolia* Frost IN TAMIL NADU

E. RAJESWARI, R. NARAYANAN and K. VANANGAMUDI

Tamil Nadu Agricultural University
Coimbatore.


## ABSTRACT

A survey was conducted to assess the natural AM colonization in rhizosphere of 2-3 years old *Casuarina equisetifolia* Frost seedling in different places of Tamil Nadu. High AM fungi spore was present in *Casuarina* rhizosphere soils of cuddalore, followed by Marakkanam and Kanyakumari. AM fungi inspection percentage was more in *Casuarina* roots of Kanyakumari followed by Cuddalore and Marakkanam. AM fungi colonization (both AM fungi spore number and AM fungi infection percentage ) was fair $P^{H}$ from 6.6 - 7.5. Among the AM fungal genus, *Glomus* spp. was present in all the ten places surveyed in Tamil Nadu. Root and shoot length, and dry weight was higher in *Casuarina* seedlings grown in soil of Kanyakumari followed by Cuddalore which recorded more AM fungi spore number and AM fungi infection percentage.


KEY WORDS: *Casuarina equisetifolia*, Survey, AM colonization, Rhizosphere.

*Casuarina equisetifolia* Frost is one of the most important species in coastal areas as well as in the arid and semi arid regions of India. Presently it is planted throughout the tropics for fuel wood production, land reclamation, sand dune stabilization and shelter belts. The species is salt tolerant, wind resistant and adaptable to poor soil. AM fungi are plant in natural communities (Gerdemann,1968). The external fungal hyphae enable the plant to extract slow diffusing nutrients such as phosphorous and also water from a layer of soil volume that the plant root system, normally exploit. A survey was conducted at ten different places of Tamil Nadu to investigate the occurence of AM fungal colonization in *Casuarina equisetifolia* rhizosphere.

## MATERIALS AND METHODS

### Sample collection

The composite of roots and rhizosphere soil of *C. equisetifolia* was collected from ten *Casuarina* plantations located at Coimbatore, Neyveli, Mettupalayam, Kanyakumari, Rameshwaram, Cuddalore, Neyveli, Tambaram, kayalpattanam, Perundurai, and Marakkanam. At each site, five tress were randomly selected and their root materials and rhizosphere soil samples were collected following the methods of Koske and Halvorson (1981). AM fungal spore was recovered from the collected soil sample by wet sieving and decanting as described by Gerdemann and Nicolson (1963) and AM fungi infection percentage of root spores extracted from the soils