

## INDIGENOUS TECHNICAL KNOWLEDGE FOR MANAGING ROOT GRUB IN ARECANUT

S. Saravanakumar and P. Alagesan\*

Farming is the prime occupation in India for over 5000 years. The green revolution fertilizers and pesticides led to high yields in hybrid crops, later on it led to serious issues like development of insect resistant, resurgence and residual problems. Natural and non pesticidal methods for controlling pests have been in place since time immemorial. Sustainable agriculture in India scenario has aroused interest on indigenous technical knowledge that has the element of use of natural products to solve the problems pertaining to the agriculture and allied activities. Indian farmers, over centuries, have learnt to grow food and to survive in different environments, where the rich tradition of indigenous technical knowledge has been interwoven with the agricultural practices followed by them.

Indigenous knowledge refers to the unique, traditional, local knowledge existing within and developed around the specific condition of the particular region. Through informed trials with ideas from multiple sources, farmers make technology fit their own reality and often improves its effectiveness, efficiency, productivity, profitability, durability, sustainability, etc., MYRADA Krishi Vigyan Kendra is in the process of documenting and validating the indigenous knowledge practices practiced by the Erode district farmer for wider adoption. Fermented castor solution trap is the one such indigenous technology practiced by the Erode

farmers for managing the polyphagous pest white grub.

Areca nut palm (*Areca catechu* L) is the important plantation crop cultivated in TamilNadu over 5000 ha. Though the crop has the potential market opportunity, non adoption of scientific package of practices leads to the potential yield loss in the farmers' field. Several pests are infesting the areca palm of which some of them are causing severe infestation. Root grub is one among the pest in TamilNadu causing considerable yield loss in arecanut.

### Root grub

The root infesting scarabaeid white grub *Leucopholis burmeistri* is the major pest on areca nut in Western Ghats of TamilNadu and Karnataka. The grubs are polyphagous in nature. In addition to areca nut, they feed on crops like sugarcane, groundnut, cotton, yams, tuber crops and coconut. The adult is a medium sized beetle having a chestnut brown colour. Availability of abundant moisture in the root zone and water logged condition has made it more susceptible to white grub attack.

### Symptoms

The root grubs feed on the young roots of the areca nut palm round the year and continuous feeding of the underground stalks leads to the yellowing of leaves, tapering of stem

\* MYRADA Krishi Vigyan Kendra, Gobichettipalayam, Erode District - 638 453. Tamil Nadu.

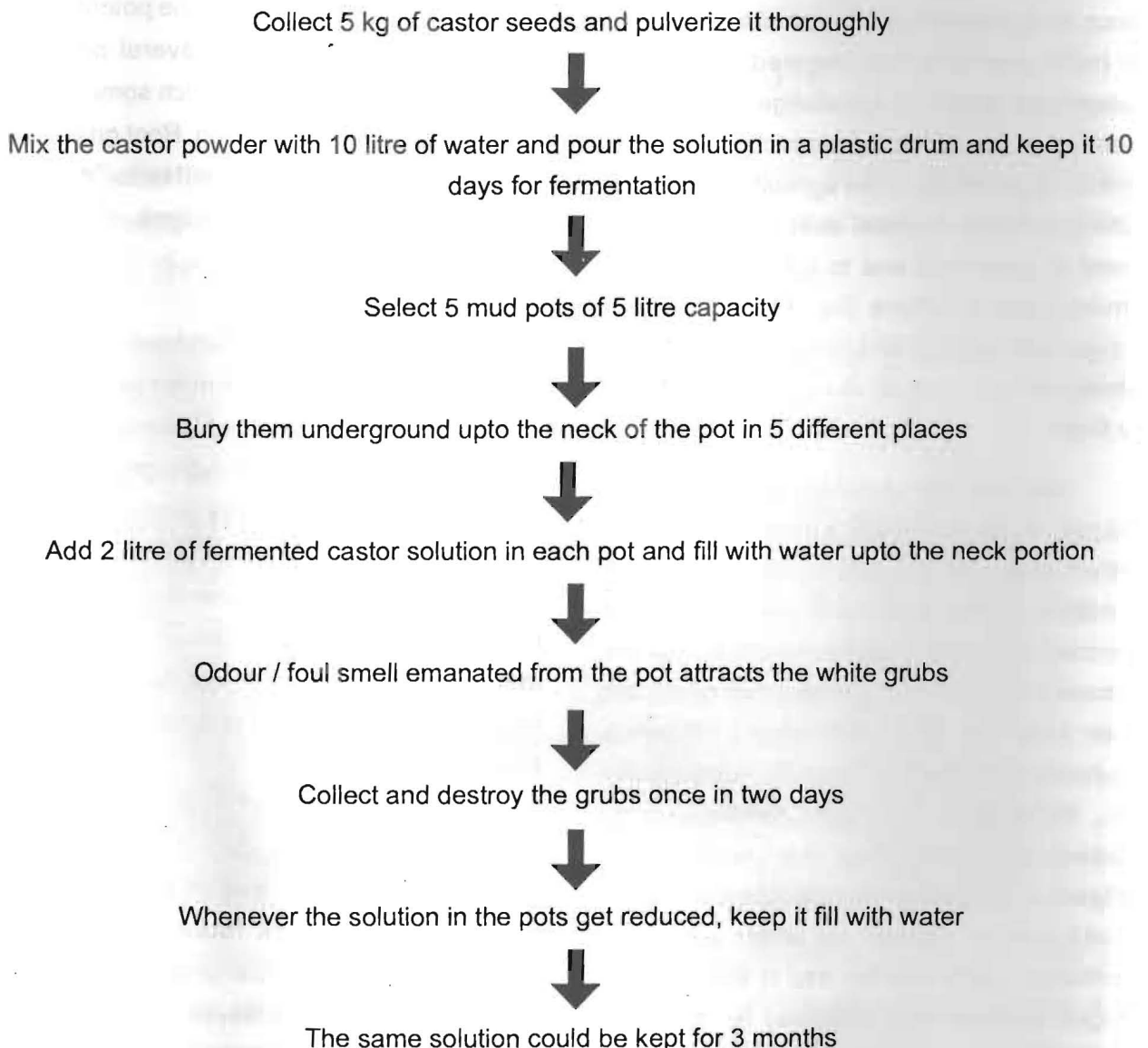
and looks sickly appearance. The affected palms could be pulled out easily as they had an entirely damaged root system. Reduction in leaf production, nut fall, production of less number of bunches and reduced yield are the other symptoms. Generally the damage occurs in patches, but during the epidemics the entire crop may be damaged.

### Management

The biological management practices becoming imperative one since, the nuts are used for direct consumption purpose. The indigenous technical knowledge, fermented castor solution trap was practiced by the farmer found effective one.

### FERMENTED CASTOR SOLUTION TRAP

#### Step wise preparation techniques





**Mud pots filled with fermented castor solution buried underground upto neck**



**White Grubs collected**

#### **Advantages of this technique**

- \* Reduces the management cost towards the white grub management
- " Easy to monitor the population and movement of grubs in the field
- " Apart from white grubs, many coleopteran pests were also trapped
- " Eco-friendly and environment safer way of pest management
- " Traps were made easily through locally available resources

This method is found to reduce the plant protection expense to 20 per cent since the cost of the entire process comes to Rs.200-250. Myrada did an extensive study on this indigenous technology over a period of four years and found

that about five pots suffice for an acre. We found that there is an 80 per cent reduction in white grub pest population. Indigenous technical knowledge is a way of life for the farmers who are challenged by ever-changing environmental and market situation in the country.

#### **References**

- Das P. *et al.*, 2004. Cross - sectoral validation Indigenous Technical Knowledge in Agriculture, Indian Council of Agricultural Research, New Delhi
- Anonymous 2010, Annual Review report, Krishi Vigyan Kendra, Erode, TamilNadu
- Anonymous 2013. Fermented castor solution traps pests of sugarcane, groundnut. The Hindu

\*\*\*\*\*