A HANDY TOOL FOR COCONUT RESEARCH

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The research workers on coconut have been finding it difficult to execute their ideas in research due to the large volume of the seednut and seedling, necessitating b gger size pots, to accommodate them thus making laboratory studies rather unwieldy. The delay in germination and availability of uninjured roots outside the husk on transplantation makes it further difficult, specially for studies involving roots. The authors felt the need for an alternative method than the customary growing of seedlings in pots transplanted from the nursery for investigations with plant parasitic nematodes as tissue culturing of excised roots appeared unsuccessful. Details and uses of a method to overcome this difficulty is given below.

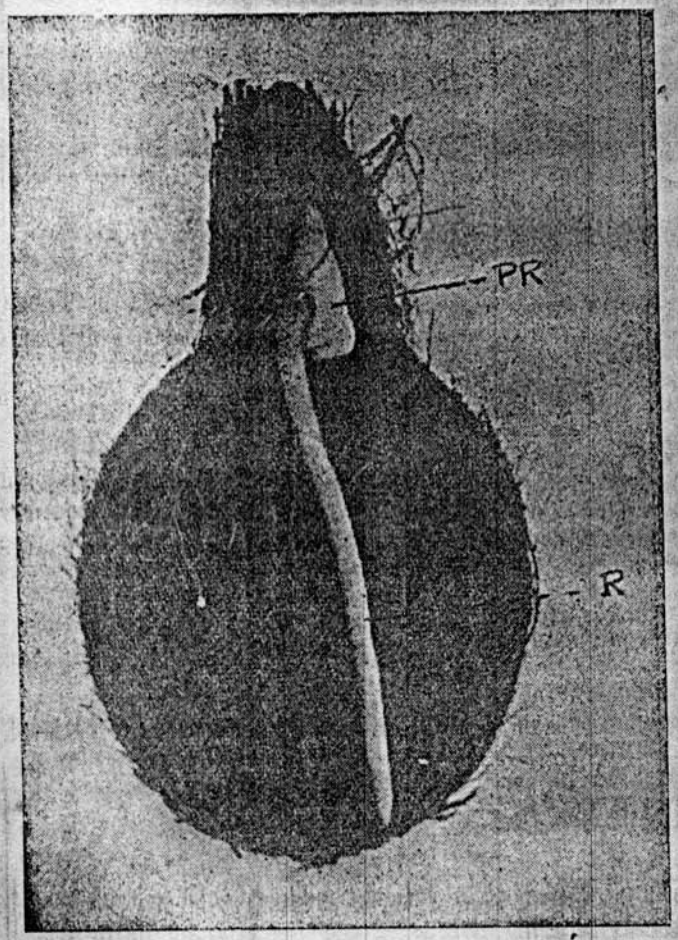

Fig. 1 Germination of dehusked nut showing root resting on the nut.

PR—Prostem R—root

Two hundred and fifty seednuts were collected from 25 west coast tall palms. Of these two hundred seednuts were dehusked retaining a tuft of fibres covering the eyes of the nut and sown in steam sterilised soil contained in 35 cm earthen pots or in thick polythene bags of 45 × 30 cm and kept on green house benches and watered regularly. Fifty unhusked nuts were sown as above which served as checks. Ninetyseven per cent of the dehusked nuts germinated within 75 to 90 days from the date of harvest unlike 91 per cent germination in unhusked nuts which took 135 to 150 days.

The volume of the sprout could be further reduced by using vars, such as Laccadive Micro and "Ayiram Kacchi". Sprouts could also be raised in media such as vermiculite, spagnum moss etc. to reduce the chances of injury to roots.

The same sprouts could be used again after cutting off the used roots. The roots rest on the shell of the nut for the first ten days (Fig. 1) with an average growth rate of 6.3 mm with a range of 4.5 mm to 7.2 mm per day which can easily be handled to study the mode of infection of fungi, bacteria, nematodes etc.

Coconut sprout is known to put out the first root usually from the bottom of the nut through the husk six weeks after germination. Following this method six weeks delay in testing a plant also is avoided.

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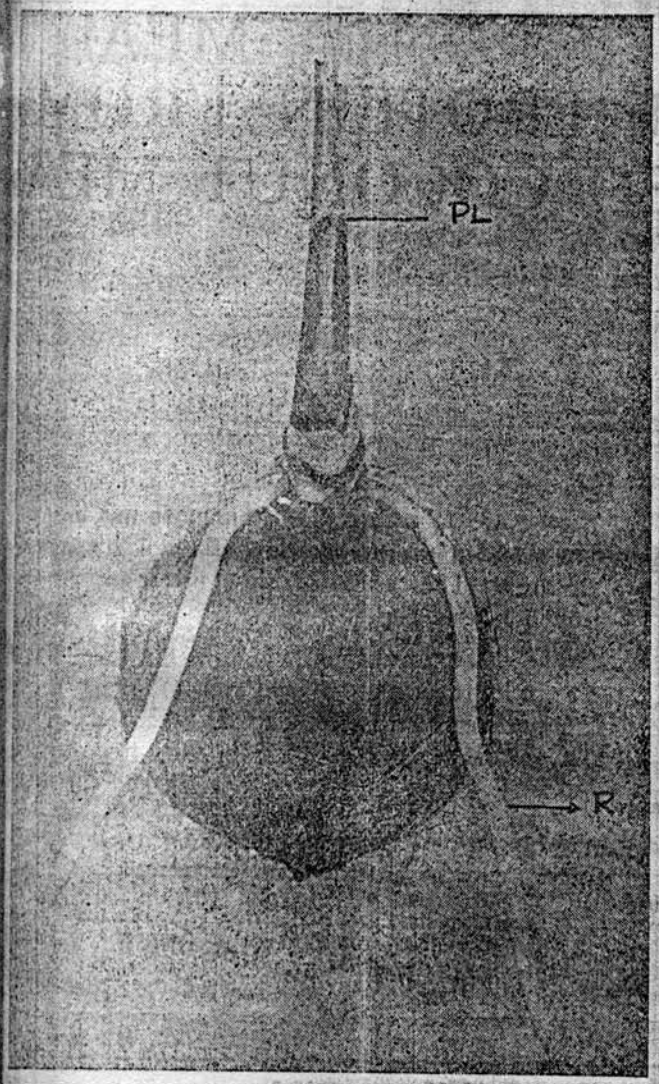

Fig. 2 Germination of a dehusked nut
R—root PL—plumule

Sprouts raised as above can be profitably used for the following studies:—

1. Varietal resistance/susceptibility of coconut cultivars to various microorganisms.
2. Mode of infection of fungi, bacteria and nematodes.
3. Histopathological and histochemical changes consequent on infections with microorganisms.
4. Virus transmission studies.
5. Studies on the nature and assessment of damage by larval stages of insects and other soil fauna.
6. Altered host metabolisms consequent to host—pathogen interaction.
7. Biochemical changes in microorganisms infested root in comparison to uninfested root of the same plant.
8. Studies on absorption and translocation of various chemicals, nutrients, antibiotics, radioactive materials, pesticides etc.

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