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Note on an effective method of preventing entry by red-weevil, *Rhynchophorus ferrugineus* Fabricius (Curculionidae: Coleoptera), into the stem of coconut palm through cut petioles

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The common practice of cutting green leaves of coconut palms (*Cocos nucifera* L.), which are in great demand for various domestic uses like thatching, fencing etc., invites danger of oviposition by red-weevil (*Rhynchophorus ferrugineus* Fabricius) and subsequent entry of hatching grubs into the stem (Fig. 1) eventually causing death of palms. Cutting the leaves in such a manner to leave behind sufficient length of the petiole, which would dry up before the hatching grubs could gain access to the stem, was therefore thought of as a possible effective means of preventing the entry of grubs into the stem. An experiment was hence designed to correlate the rate of linear progress of the grub with the period of drying up of leaf petiole, to determine the distance at which the leaf could be cut without fear of offering portals of entry of weevil grubs even when the eggs would be laid at cut ends.

Coconut leaves were cut at 3 different distances from base, to leave behind on the stem petioles of 3 different lengths, viz. 40, 80 and 120 cm. Three leaves were cut from each palm, to correspond to first, second and third positions from the outermost leaf. Total 105 palms were studied in 35 groups of 3 each, in which the lengths of petiole and position of cut leaf followed the latin-square arrangement. The periods required for drying by each of the 315 petioles were recorded. The experiment was carried out from January 21, 1967, to May 11, 1968. Rate of linear progress of the grubs was studied in laboratory by introducing just-hatched larvae collected from a culture maintained into scoopings made at cut ends of long petioles brought from the field, and measuring the progress made by the

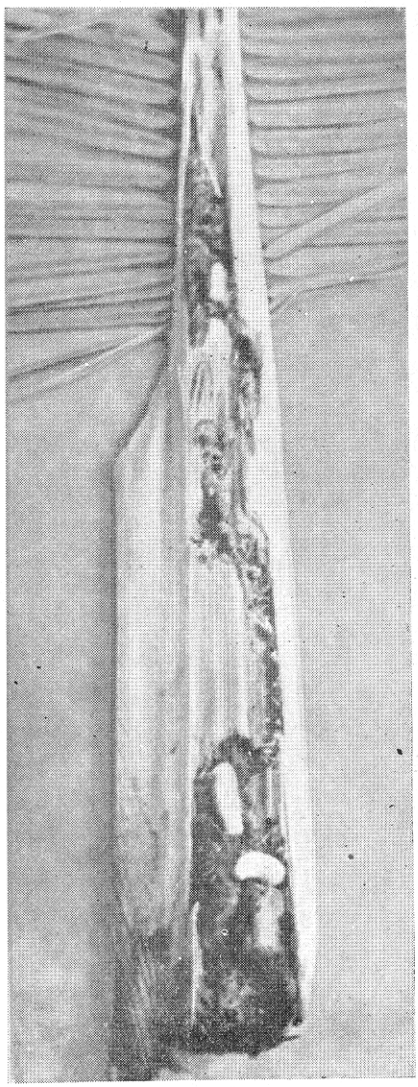

Fig. 1. Grubs of red-weevil inside the cut petiole of coconut palm leaf.

tunnelling grub at intervals of 5 days up to the pupal stage.

The time taken in the drying up of the basal portion of leaf petioles staying on the stem after cutting, and becoming unsuitable feeding ground for tunnelling grubs, did not vary significantly during the rainy and hot seasons. Nor did it have any direct bearing to the length of petiole. Similarly, the position of the leaf also did not show any significant difference in the drying period. The average period required for drying up of petioles cut at the lengths of 40, 80 and 120 cm was 34·15, 42·15 and 48·67 days (standard deviation 11·12, 10·73 and 12·75) respectively. Fifty per cent petioles dried up in 30, 41 and 48 days and 75 per cent in 38, 45 and 55 days, respectively, at the 3 distances. The larva made an average linear progress of 53·30 cm within the leaf petiole (range 43·5–65·5 cm) within 38 days, 70·99 cm (range 55·5–84·0 cm) within 45 days and 100·49 cm (range 70·5–114·5 cm) in 55 days in a total of 10 replications. Thus if the leaves are cut to leave behind a petiole length of 115 cm or more, 75 per cent of the entry of pest into the stem through cut ends of leaf petiole can be avoided. Mean length of 100 petioles from palms between 5 and 20 years old, usually susceptible to infestation by the pest, was 137·92 cm. In general, therefore, red-weevil grubs hatching out of eggs laid at cut ends of leaf petioles will not be able to make their way into the trunk before the staying petiole dries up, if leaves are cut at or beyond the region whence leaflets emerge at the base.

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Note on an improved method of screening sugarcane varieties against red-rot disease

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Growing of resistant varieties is the most inexpensive method of avoiding any disease. Hence an effective method of inoculation and classification of sugarcane varieties was studied in the present experiment.

'Plug method' of inoculation, which is followed throughout India, consists in introducing a bit of inoculum in a hole cut by a cork-borer on standing sugarcane and covering it up suitably. The inoculum consists of mycelium, spores and agar medium cut from a Petri-dish in which the fungus is grown. At the time of inoculation the Petri-dishes have to be inevitably opened frequently, thus creating chances of contamination of the inoculum. To maintain better aseptic conditions in the field, the following method was adopted.

A suspension of conidia of the causal organism, *Physalospora tucumanensis* Speg., was made by putting a few millilitres of sterile water in a Petri-dish containing a pure culture of the fungus and gently disturbing the surface with a sterile brush when the spore masses came into suspension. Sugarcanes were inoculated in the field by putting a drop of spore suspension

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