

ENTOMOLOGY BULLETINS: NO. 4

THE USE OF CRAZY ANTS IN THE CONTROL OF PANTORHYTES IN COCOA

By E.S.C. Smith, Entomologist
Lowlands Agricultural Experiment Station, Keravat

Pantorhytes are the most damaging insect pests of cocoa in Papua New Guinea. The larvae (grubs) bore into the trunk, jorquette and main branches of cocoa trees, weakening and often killing them. Very often, the larval channels become infested with cocoa canker. The disease often kills trees, especially those older than 12-15 years. Adult *Pantorhytes* feed on the bark of cocoa shoots, young seedling replants and pod husks.

In the past, many control methods have been tried, but most have been unsuccessful. However, it has been noticed that where crazy ants occur in large numbers in cocoa, *Pantorhytes* are never a serious problem. Because of this, the Department of Primary Industry has recommended the introduction of crazy ants to sole planted cocoa blocks for the control of *Pantorhytes*.

CONTROL OF *PANTORHYTES* BY CRAZY ANTS

When crazy ants move into an infested block, *Pantorhytes* appear to be forced out and kept out as long as ant populations remain high.

Crazy ants are very active predators and scavengers, and will remove *Pantorhytes* eggs from the roughened bark where they were laid. They have been seen to tear apart a newly emerged, soft-shelled *Pantorhytes* adult. The ants also continually attack adult hard-shelled *Pantorhytes*, which gradually move away from the ant-infested cocoa area or die. In laboratory studies, all caged adult weevils were killed when attacked by crazy ants over several days.

INTRODUCTION OF CRAZY ANTS TO INFESTED BLOCKS

The introduction and establishment of crazy ants in cocoa may not be easy, and may often be unsuccessful. Here one method of introducing these ants is suggested:-

1. Cut sections of giant bamboo leaving a node closing one end of the tube and the other end open.
2. Place some attractive food (such as a slice of sugarcane or a cocoa bean) and some leaf litter into each tube.
3. Put these bamboo tubes down in an area with high numbers of crazy ants. Suitable areas may be found in cocoa but may also occur in gardens, along beaches or in open, disturbed areas.

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4. Place three bamboos near a crazy ant nest. Nests will most often be found in leaf litter at the base of trees. Only collect crazy ants from every third tree, to make sure that there are plenty of ants left.
5. Check that the mouths of the tubes are lower than the closed ends so that water does not get in.
6. After about a week, many of the tubes will be colonised (occupied) by ants which have transferred their eggs, larvae and pupae into the new nests of bamboo. Move the tubes to a new area if this does not happen.
7. After most of the bamboo tubes are seen to be colonised, they may be collected, tied up in groups of three, and carried to the *Pantorhytes* infested cocoa. Handle the tubes carefully, keeping them horizontal so that the new colony is not unnecessarily disturbed. Firmly attached covers over the open ends of the tubes will keep the ants from escaping while being moved.
8. Colonised bamboo tubes should be placed in groups of three in the release areas. A group should be placed at the base of every third cocoa tree in every third line.
9. Once again the tubes should be placed so that they don't fill with water. Put attractive food near the entrance of the tubes for the ants to eat during the first few days. Cover the tubes with leaf litter, coconut fronds or coconut husks to prevent animals such as lizards and toads from eating the ants.
10. After the ants have built nests on the ground, the tubes may be collected and used for further introductions.

ESTABLISHMENT OF THE CRAZY ANTS

The grower may help crazy ants to establish (settle in) in his cocoa blocks by forming suitable conditions within the block. Some ways to help the crazy ants are listed below.

Before the introduction of crazy ants

1. Blocks should be mapped to show the areas infested by *Pantorhytes*. This will help in putting the tubes in the right places during the introduction.
2. Poorly drained areas of the block should be drained.
3. *Gliricidia* should be planted at intervals throughout the block, and especially in very open-canopied areas.
4. Any chemical spraying against mirids (capsids) or weeds should be finished at least three weeks before introduction as the chemicals used are harmful to crazy ants. Weeds should be controlled immediately before introduction (not with herbicides).

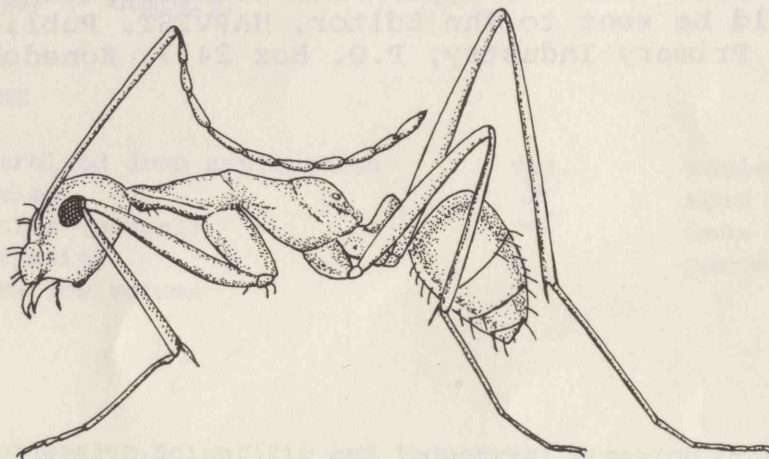
At the time of introduction

1. Bamboo tubes should be introduced to *Pantorhytes* infested blocks during the drier period of the year.
2. Release sites should be selected with care and preferably be in exposed, well-drained areas where grass cover is short.
3. Remember to release ants outside the *Pantorhytes* infested area first, and then work inward, since *Pantorhytes* will be pushed from the colonised area.

After introduction

1. Where possible, avoid insecticide and herbicide sprays.
2. Keep grass cut regularly in the block.
3. Consider the planting of a boundary of *Gliricidia* around the block in an attempt to keep the ants in the block.

Any queries on this method of introducing crazy ants, or on any aspect of cocoa growing, should be addressed to: The Agronomist-in-Charge, Lowlands Agricultural Experiment Station, KERAVAL, East New Britain Province.



A crazy ant

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