

## EFFECT AS BIOCON AGENT

- ◆ The **Green Muscardine Fungus (GMF)** infects the larva, pupa and adult of the beetle.



- ◆ The white mass of the fungus can first be seen on the surface of the mummified body of the beetle about 10 days from infection. The green fungus appears after another 3 to 5 days.



Heavily colonized rhinoceros beetle larvae by GMF.

## METHOD OF APPLICATION

- Installation of GMF-treated sawdust trap boxes.
  - ❖ As a preventive control of rhinoceros beetles. Fifty (50) gms. Of GMF is introduced into sawdust trap boxes. These boxes intend to attract the wild population of beetles as egg laying sites. Five (5) boxes 0.5 m x 0.5 m x 1.0 ft are installed randomly per hectare. Initially, 25 gms of GMF powder is spread over a 3-inch layer of sawdust at the bottom of the box. Then the box is filled to the rim and another 25 grams GMF is added and mixed thoroughly.



- ❖ 25 gms GMF is spread over the lower layer of sawdust



- ❖ GMF-treated sawdust trap

- ❖ More desirable results are obtained when 2 to 5 live GMF-infected beetle larvae are introduced into the trap box.

- Monitoring of Trap Boxes

- ❖ Assess the trap boxes every 4 months. Collect infected beetles; destroy trapped adults. Collect GMF-infected larvae and infect healthy ones, if any, and re-introduced into trap boxes. Add more sawdust if necessary or recharge the boxes with new decaying sawdust and apply GMF.

- Prevent development of beetle population through field sanitation.
  - ❖ Collect and utilize coconut debris like slabs, leaves, rachis cabbage as firewood or food or pile and burn on site.
  - ❖ Collect or utilize coconut sawdust as potting and organic composting materials or scatter thinly on the ground.



- ❖ Piling of debris

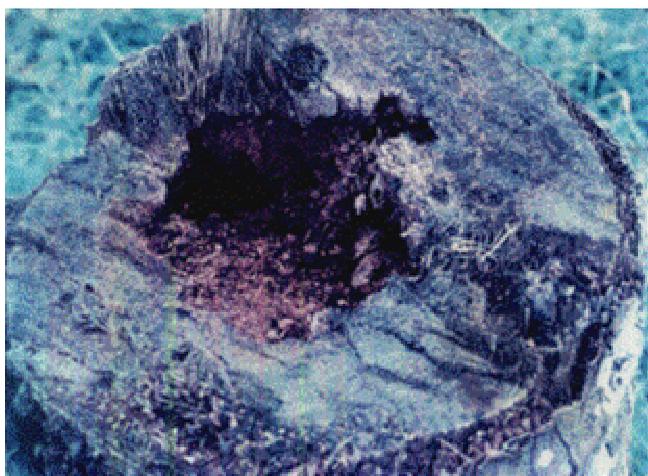


- ❖ Burning of debris

- ❖ Estimate developing breeding sites in the immediate and surrounding area.

- Other forms of breeding media of rhinoceros beetles in their rotting state include the following and the corresponding action.

| <b>Breeding Sites</b>      | <b>Action to be Taken</b>                                                                  |
|----------------------------|--------------------------------------------------------------------------------------------|
| ❖ Corn cobs heaps          | Apply GMF utilize as compost potting material spread thinly on the ground                  |
| ❖ Rice straw piles         | - do -                                                                                     |
| ❖ Cow manure heaps         | Apply GMF, utilize as organic fertilizer, spread thinly on the ground or use in composting |
| ❖ Rubber stumps/logs       | Utilize as firewood, burn                                                                  |
| ❖ Sugar cane bagasse heaps | Apply GMF utilize as animal feed, burn or scatter thinly in the field                      |
| ❖ Rotting coconut stump    | Pour GMF suspension at 200 grams GMF powder per 16 liter of water                          |



Rotting stump left after felling as application point for GMF spore suspension.

#### FOR ADDITIONAL INFORMATION

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### GREEN MUSCARDINE FUNGUS (GMF), A LETHAL POWDER TO CONTROL THE COCONUT RHINOCEROS BEETLE



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