Webinar
on
Paddy and Paddy Bug Management
will commence
at 10:00 am
GUYANA RICE DEVELOPMENT BOARD

Webinar on

PADDY BUG AND PADDY BUG MANAGEMENT

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An example of 63.7% paddy bug damage

Paddy bug unmanaged
Introduction

• Rice, grown twice per year on more than 90,000 hectares each time, is important for agriculture and livelihood in Guyana.

• One of the major challenges is the damage caused by insect pests:
  ✓ Leaf miner
  ✓ Caterpillar/Armyworm
  ✓ Water weevil
  ✓ Paddy bugs – incidence and damage

• Paddy bug damage in Guyana was first reported from Leguan in 1904.
  • Outbreaks occurred at irregular intervals...
• Rice fields have been plagued continuously by the paddy bug.

• All the rice growing Regions are known to be affected.

• In 2\textsuperscript{nd} Crop, 2019, damage ranged from 0.1 – 88.6%.

• Damage above 4.5% is considered as sample grade – the lowest grade.
What is this insect?

• Paddy bug, ghundi bug, ghandi, bush bug, stink bug, earhead bug
Paddy bug incidence/occurrence

• Invade from an unknown source or migrate from field to field.
• When?
  ✓ Ideally when the rice plant is flowering
  ✓ At 30 days after sowing when alternate hosts are flowering
  ✓ Movement happens at dusk and dawn

• Where?
  ✓ Wherever has its food – rice fields, dams, meres, abandon fields, coconut estates, kitchen gardens, fields of other crops, etc.
  ✓ Mostly on the bird seed grass

• Why?
  ✓ To feed and multiply where the food source is ideal (bearing rice plants)
  ✓ Technically, to spread their breeding/offspring in space and time

• How?
  ✓ Strong flyers over long distances, transit points
  ✓ Use pheromone to keep themselves together
Alternate hosts

Birdseed grass

Watergrass

Iron grass
Paddy bug life-cycle

- Immediately or 1 month
- In a few days or 1 week
- Overnight

5 moults in 15 to 17 days

3 to 5 days
How damage is caused?

- Flowering – there is sterility, development is aborted and grains remain empty

- Milk stage
• Dough stage
• Ripening stage
• Other type of damage
• Integrated Pest Management (IPM) is the use of several compatible control strategies to suppress a pest.

• The IPM program for paddy bug management in Guyana contains:
  ✓ Good land leveling
  ✓ Sowing within the recommended sowing period
    ❖ November 15 to December 30 or
    ❖ May 15 to June 30
  ✓ Sow at the same time as your neighbor or within 2 weeks (block planting)
  ✓ Ensure effective control of early season pests
  ✓ Use the recommended fertilizer regime
  ✓ Use the recommended water management regime
  ✓ Keep dams and meres free from alternate hosts
The crop is 30 days after sowing (DAS) and healthy

Monitor on alternate days from 30 DAS up to flowering using a sweep net and daily from flowering up to 10 days before harvesting
Farmers must not harbor paddy bugs

- Kill invading adults as they come
- Destroy egg masses
- Spray fields based on the threshold of 1 bug in every 2 sweeps
- Spray rice fields when the number of bugs is increasing over 2 to 3 days; when the number of bugs is approaching the threshold; when the number of bugs has reached or exceeded the threshold; and if there is a low continuous presence for 7 to 10 days

Do not spray after 8am or before 4pm if the crop is flowering...
Always use two motor blowers per acre
• Improper coverage of the spray mist
• Jacto

• Aircraft
## Recommended insecticides

<table>
<thead>
<tr>
<th>Systemic:</th>
<th>Contact for fast knockdown:</th>
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</thead>
<tbody>
<tr>
<td>Pronto@30-40g/acre</td>
<td>Fastac@60-80ml/acre</td>
</tr>
<tr>
<td>Renova@40-50g/acre</td>
<td>Hyperkill@60-80ml/acre</td>
</tr>
<tr>
<td>Sydbar@50-60ml/ac</td>
<td>Jackpot@50-60ml/acre</td>
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Mix and apply the insecticide properly

- Fill the motor blower halfway with water
- If insecticide is a power or granule, then dissolve the recommended rate in a bucket before adding it to the half-filled blower.
- If the insecticide is a liquid, then add the recommended rate directly into the half-filled blower.
- Shake the half-filled blower containing water and insecticide.
- Add water to the blower up to the 13-liter mark, then shake again.
- The spray-man is now ready to spray.
- Determine the swath (spray) width based on the wind direction and speed.

- Farmers must be attired with proper protective gears when applying insecticides.
- Rotate insecticides
Preserve and conserve natural enemies

- Lady bird beetle
- Spider
- Dragon fly
Damsel fly

Beskia pupa

Eggs parasitized by Telenomus
Field No. 1 – GRDB 14 (27.51 acres) = 1111@143lbs/bag

- Fastac (24.24 liters) – $33,936
- Sydbar (3.24 liters) – $35,251
- No. blowers sprayed – 714@$390 – $278,460
- Total cost – $347,647
- Cost per acre = $12,637

Paddy bug damage – 1.1%
Field No. 2 – GRDB 10 (**26.02 acres**) = 1038@143lbs/bag

- Fastac (4.16 liters) – $5,824
- Sydbar (1.56 liters) – $16,972
- Pronto (0.96 kgs) – $9,216
- No. blowers sprayed – 204@$390 – $79,560
- Total cost – $111,572
- Cost per acre = $4,288

Paddy bug damage – 1.4%
Field No. 3 – G-98-196 (26.33 acres) = 867@143lbs/bag

- Fastac (14.64 liters) – $20,496
- Sydbar (3.06 liters) – $33,293
- No. blowers sprayed – 468@$390 – $182,520
- Total cost – $236,309

Cost per acre = $8,974

Paddy bug damage – 0.2%
Future prospects

• Implementation of this IPM program
• Taxonomic/molecular identification of all the species
• Biological control to be the cornerstone of IPM
• Traps or aggregating attractants
• Understanding the off-season survival mechanism and sites
Conclusion

• Managing the paddy bug calls for national effort and cooperation by all stakeholders.
THANK YOU

<4.5% PADDY BUG DAMAGE
Ministry of Agriculture Complex,
Guysuco Compound,
LBI, East Coast Demerara.

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