



Guyana Rice
Development Board

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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Paddy bug unmanaged



An example of **63.7%** paddy bug damage



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 2nd 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



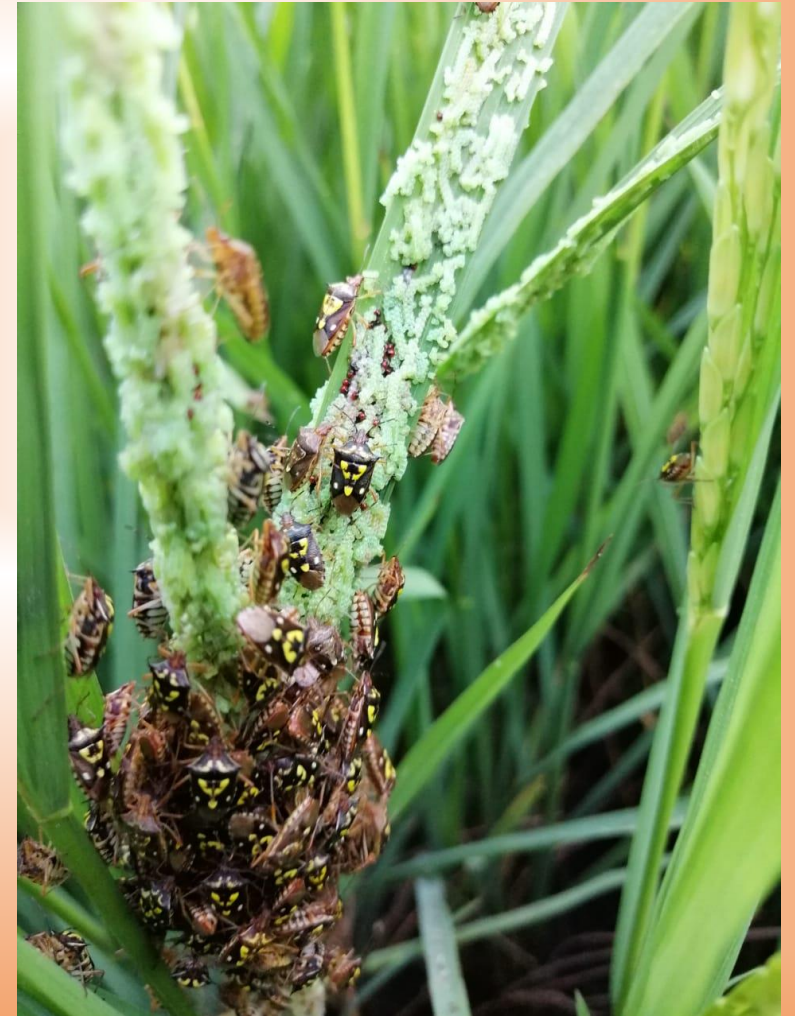
Other species





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



Sedge



Cyperus/water sedge



Goose/flower grass



Schoonard grass



Red rice



Paddy bug life-cycle



Immediately
or 1 month

In a few days or 1 week

Overnight

3 to 5
days

5 moults
in 15 to
17 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





Damage control - IPM

- 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

| Systemic: | Contact for fast knockdown: |
|--------------------|-----------------------------|
| Pronto@30-40g/acre | Fastac@60-80ml/acre |
| Renova@40-50g/acre | Hyperkill@60-80ml/acre |
| Sydbar@50-60ml/ac | Jackpot@50-60ml/acre |

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



Damselfly



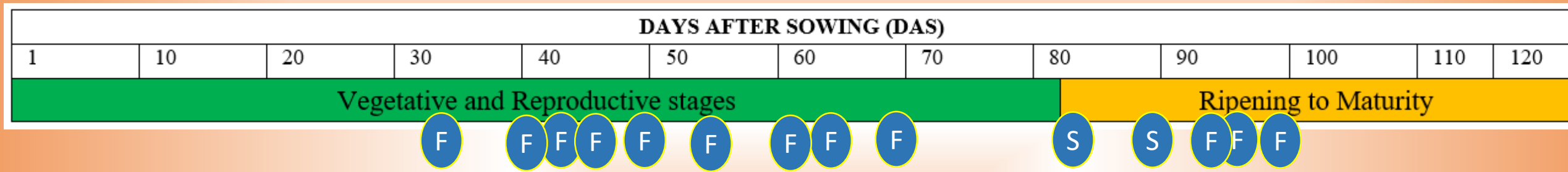
Beskia pupa



Eggs parasitized by
Telenomus



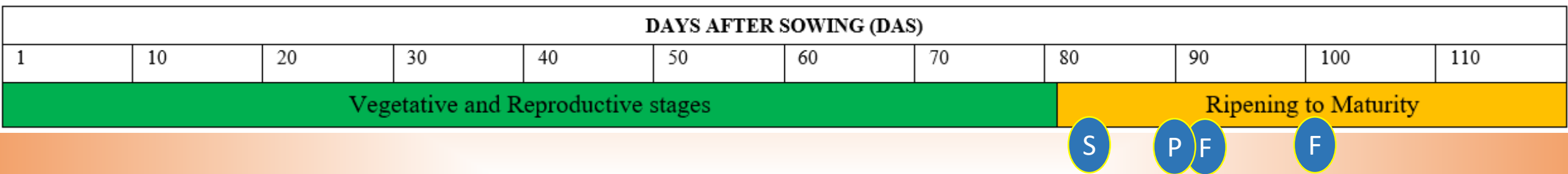
Cost Analysis



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

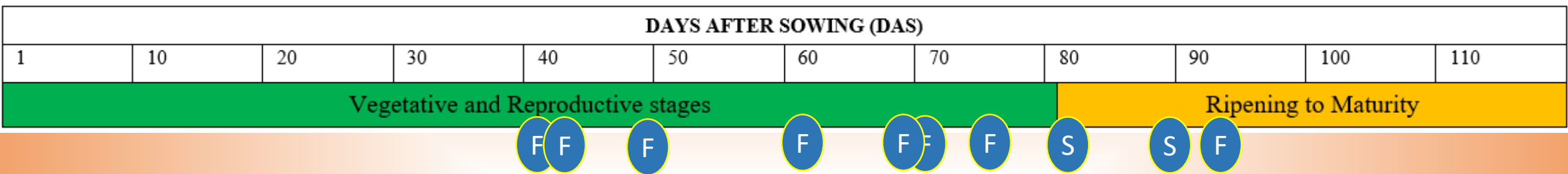
Paddy bug damage – 1.1%



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.

IT'S ILLEGAL TO HARBOUR PADDY BUGS

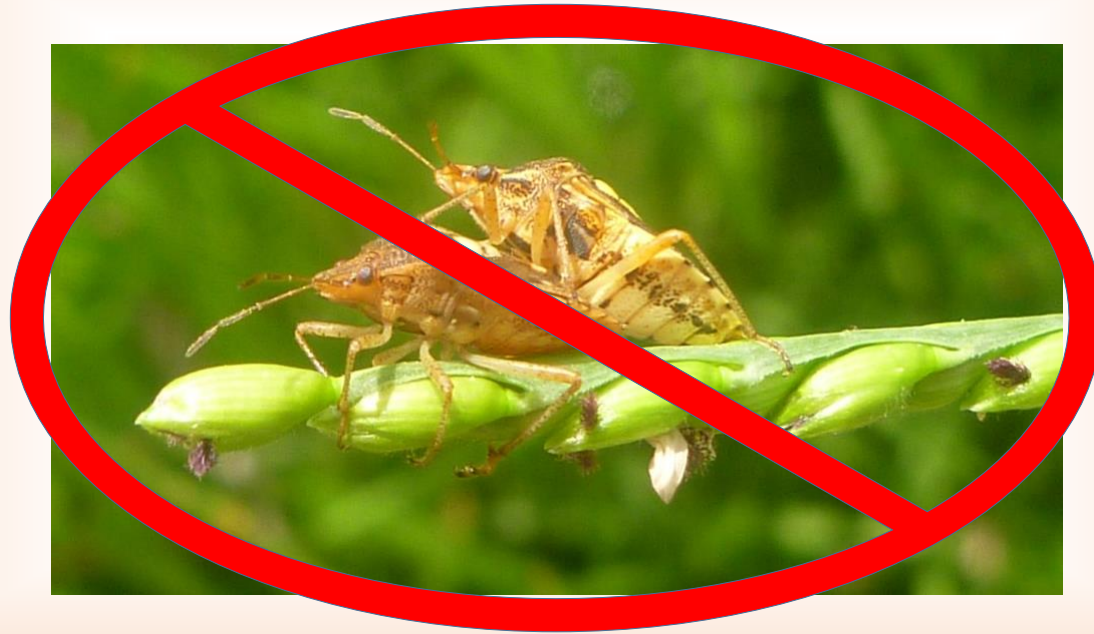
Paddy Bug, locally called 'Ghandi', has been made a notifiable pest under the Plant Protection Ordinance, according to an order published in the Official Gazette of June 20.

The feeding habit of the paddy bug

on maturing rice grains cause discolouration which lowers the grade and price.

Farmers must now pay particular attention to their crops to control paddy bugs in order to avoid penalty under the ordinance.

THANK YOU



<4.5% PADDY BUG DAMAGE



Guyana Rice Development Board

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