

***PRACTICAL ASPECTS TO MANAGE
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PLANTHOPPERS IN RICE***

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Population dynamics:

| YEAR | APRIL | | MAY | |
|------|--------|------|-------|------|
| | BPH | WBPH | BPH | WBPH |
| 2003 | 4820 | 10 | 510 | 60 |
| 2004 | 65120 | 420 | 32464 | 0 |
| 2005 | 113985 | 0 | 37031 | 10 |
| 2006 | 168360 | 100 | 26186 | 13 |

- The summer shower plays a major role in the perpetuation and early build up of planthoppers on rice
- Early stages of the Kharif WBPH is predominant.
- BPH used to dominate from October onwards
- During rabi only BPH will be predominant

Reasons for ineffective control

- **Non adoption of recommended practices (both cultural and chemical)**
- **Use of ineffective chemicals (Table)**
- **Defective application technology**
- **Inclement weather conditions**

Planthopper build up in different treatments

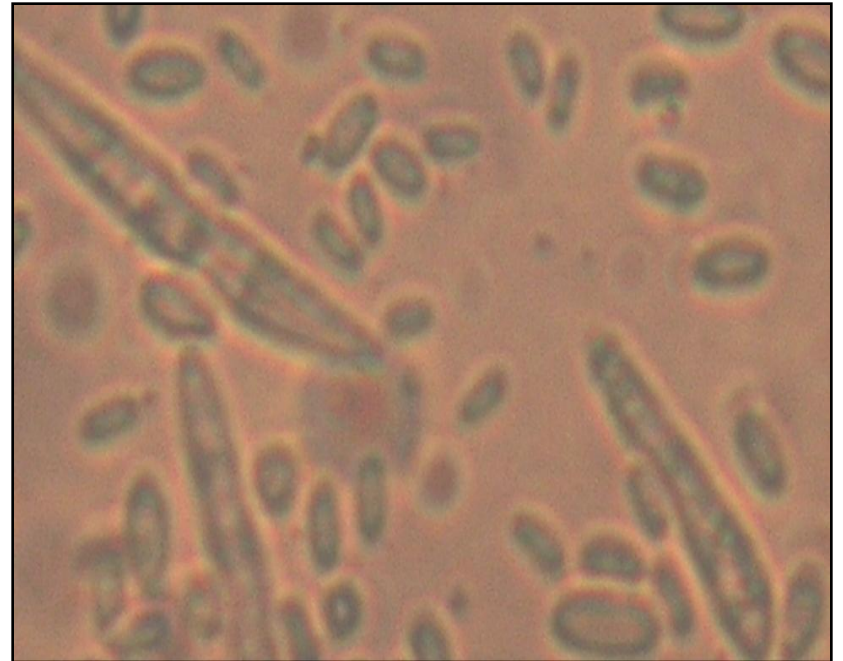
| S.No. | Insecticide | Planthopper numbers/20 hills | |
|-------|----------------------|------------------------------|---------------|
| | | Early in the season | At their peak |
| 1 | L-cyhalothrin 2.5 CS | 605 | 3732 |
| 2 | L-cyhalothrin 5 CS | 97 | 234 |
| 3 | Deltamethrin | 215 | 1652 |
| 4 | Cypermethrin | 375 | 3200 |
| 5 | Phorate 10 G | 215 | 4020 |
| 6 | Triazophos | 117 | 2957 |
| 7 | Endosulfan | 56 | 5635 |
| 8 | Monocrotophos | 117 | 1026 |
| 9 | Imidacloprid | 7 | 113 |
| 10 | Thiamethoxam | 9 | 95 |
| 11 | Acephate | 82 | 495 |
| 12 | Fenobucarb | 7 | 308 |

Field observations

- Uncontrollable populations
- Inadequate control of combination products
- Differential efficacy of insecticides against BPH and WBPH

| Particulars | | 60 DAT | 65 DAT | 75 DAT | 80 DAT | 85 DAT |
|--------------|-----------|--------|--------|--------|--------|--------|
| Control | BPH No.s | 135 | 2090 | 1783 | 1072 | 2706 |
| | WBPH No.s | 542 | 5910 | 4953 | 1750 | 5416 |
| Imidacloprid | BPH No.s | 217 | 231 | 480 | 670 | 408 |
| | WBPH No.s | 62 | 216 | 166 | 426 | 235 |
| Thiamethoxam | BPH No.s | 11 | 28 | 77 | 48 | 46 |
| | WBPH No.s | 28 | 4 | 145 | 54 | 113 |
| Acephate | BPH No.s | 82 | 230 | 495 | 77 | 39 |
| | WBPH No.s | 242 | 647 | 1450 | 108 | 98 |

- Incidence of entomopathogens
- Efficacy of insect growth regulators



What is to be done

- **Stop encouraging ineffective combinations**
- **Discourage the use of resurgence causing chemicals**
- **Holiday for ineffective chemicals and exploit multiple attack strategies**

Action plan for effective management

1. Grow planthopper tolerant varieties: Vijetha, Cottondora sannalu , MTU 1061 (INDRA)
2. Form alley ways
3. Adopt wider spacing: 20 x 15 cm (Kharif), 15 X 15 cm (Rabi)
4. Apply recommended doses of fertilizers: 60:40:30 kg NPK/ha (Kharif), 120:60:40 Kg NPK/ha (Rabi)
5. Practice alternate wetting and drying
6. If planthopper population exceeds 20-25 nos/hill adopt plant protection with the following insecticides:

1st Spray : Imidacloprid (50 ml/ac)/Thiamethoxam (40 g/ac) *

2nd Spray : Monocrotophos (440 ml/ac)/Acephate (300 g/ac)

3rd Spray : Ethofenprox (400 ml/ac)

4th Spray : Fenobucarb (400 ml/ac)

If the populations are high at the first instance, avoid * neonicotinoid chemicals.

NOTE: 1. Use 200 lt of spray fluid/ac and the spray should be directed towards the base of the plant

2. Do not use any insecticide mixtures
3. Alternate the insecticide for the next spray with another group of chemical as shown above
4. Drain the field immediately after the spray for one or two days.
5. Avoid the use of synthetic pyrethroids and un recommended chemicals.

Future thrust

- ❖ **Studies on entomopathogens against planthoppers**
- ❖ **Exploiting the use of insect growth regulators**
- ❖ **Intensification of studies on the populations of planthoppers**

THANK YOU