

## Prediction model

### Hopper

Based on the three years data of hopper population dynamics and thermal indices including Growing Degree Days (GDD), Heliothermal units (HTU) and Photothermal Units (PTU), linear regression prediction models were developed for mango belt encompassing Lucknow region (Fig. 20a,b,c).

The thermal indices particularly during flowering and fruit set, varied across the seasons. Normally with the progress of reproductive phase in mango *viz.*, flowering, panicle emergence, fruit set and development, hopper population shot up based on existing hydrothermal conditions. Application of thermal indices confirmed that variations in mango hopper population can be predicted with more than 80 per cent accuracy.

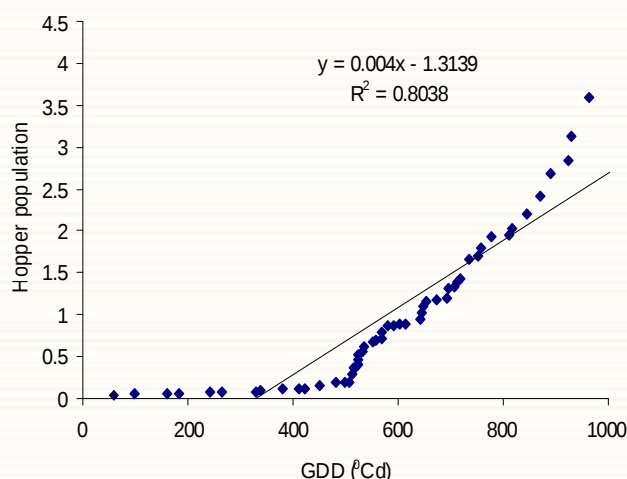


Fig. 20a. Population dynamics of hoppers *vs* GDD

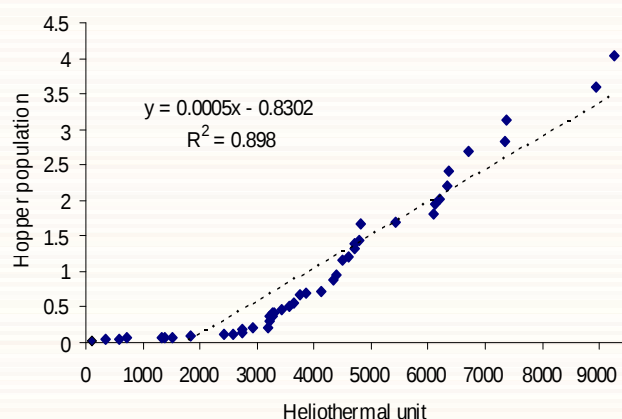


Fig. 20b. Population dynamics of hoppers *vs* HTU

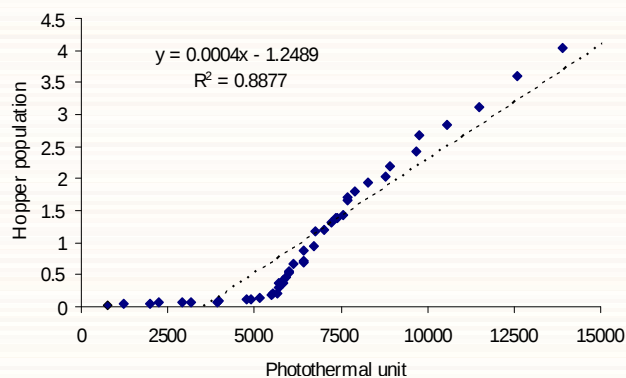


Fig. 20c. Population dynamics of hoppers *vs* PTU

## Evaluation of newer pesticide molecules and botanicals

### Leaf webber

Evaluation of eight insecticides against leaf webber and their comparison with lambda cyhalothrin (5 EC 1ml/lit) as a standard check revealed that quinalphos (2ml/lit) was most effective against leaf webber (70% mortality) and was at par with standard check followed by dichlorvos 76 EC 1.5 ml/l, spinosad 44.2 SC 0.2ml/lit and chlorfenapyr 10 SC 1ml/lit, which effected 61.67, 60.0 and 58.34 per cent mortality, respectively. Study indicated that quinalphos, spinosad and chlorfenapyr can also be used as an effective alternative to lambda cyhalothrin 5 EC (Fig. 21).

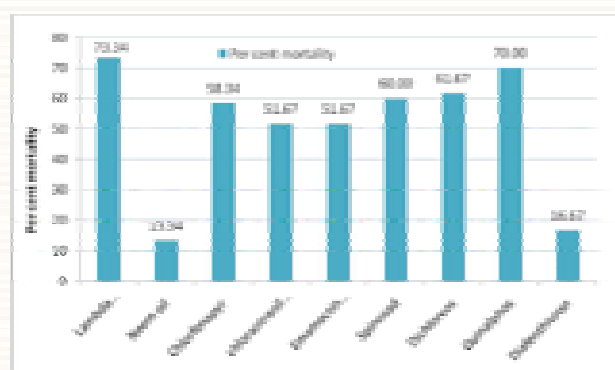


Fig. 21. Evaluation of newer pesticide molecules for the management of leaf webber

### Fruit borer

Lambda cyhalothrin (1ml/lit) was effective and at par with quinalphos (2ml/lit) resulting in 90 per cent mortality of the pest. Diafenthiuron (0.6g/lit) caused 60 per cent mortality.