

Technical Data Sheet - Trichogramma

Monitoring for parasitism of *Heliothis* eggs



Percentage parasitism can be determined by collecting the target host eggs, placing them singly into cells of a multi cell tray and observing them to see whether a grub or wasp emerges. By doing this weekly during pressure periods a history is developed and trends can be observed.

The steps for sampling *Helicoverpa* are as follows:

- Collect at least 20 eggs, preferably more, from across each block. Collect 5 or so eggs in an area but not from the same plant then move to a different spot and so on.
 - **Select "brown" eggs.** Pure white eggs may have just been laid and may not have had time to be parasitised.
 - Eggs can be collected in the field by punching out discs of leaf containing the egg with a single hole paper punch. The discs are placed into a multi cell tray. (96-well Microtitre trays are available from Bugs for Bugs) Alternatively, sections of leaf can be collected in the field and the eggs removed later.
 - Cover the tray with strips of clear, wide cellotape. Make a small hole with a needle in the tape over each cell. This will allow the moisture from the leaf to escape and prevent mould. Label the tray with date, site, etc. Keep in a warm place (around 25 to 30 deg C if possible) but out of direct sun.
- The eggs that are not parasitised will darken and produce a small caterpillar in about 3 days (depending on temperature). Mark these cells with a cross as these cells will not need further inspection. For scouting purposes this may be all the information that is required.
 - The eggs that have been parasitised will go a coal black colour in about 4 to 5 days.
 - All the cells can now be inspected with a hand lens. Record whether eggs hatched (H), unhatched (U), or parasitised (P). Percentage parasitism can then be calculated. Unhatched or unviable eggs are not included in the percentage parasitism calculation.
 - Wasps will emerge from black eggs in about 7 days depending on temperature. Up to six wasps may emerge from one *Helicoverpa* egg.
 - Percentage parasitism checks will usually under-estimate the actual level of parasitism. It is a question of "by how much"? This will depend on how "brown" or developed the eggs are when you collect them. Off-white eggs may still be acceptable to wasps when collected and may be parasitised if left in the field for another day.

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