

Short report on *Helopeltis* attack & control

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Recent developments

At the 2009 meeting, I reported on the two main methods currently in practice in Indonesian plantations, viz chemical sprays and encouragement of the black ant, *Dolichoderus bituberculatus*. Since then there has been further clarification of some aspects.

There is clear evidence that the two methods are not combinable in ongoing practice. The idea was that newer systemic chemicals which allowed ant activity to continue could be applied in fields with ant control. The problem seemed to be that the applications reduce the mealybug numbers drastically, thus removing the ants' main food sustenance. Serious incidence of dieback has occurred, with consequential yield drop, after such applications. Evidence that *Helopeltis* is responsible for this consequence includes –

- Dieback symptoms typical of what *Helopeltis* is known to do.
- If *Helopeltis* control by chemicals is thoroughly applied, the canopies recover, followed by yield increase.

Control by ants

This is my preferred method, and any scepticism I originally felt is resolved, based on observation and trial results. Provided they are looked after, ants keep *Helopeltis* damage well below economic thresholds. This means maintenance, repair and replacement of the simple leaf ball nests that are put into bushes for the ants. There is some indication that they keep CPB in check also – something I have been even more unsure about in the past. Evidence will continue to be assessed.

Spray chemical control

This can be effective, but it must be done properly, which is no doubt why views on it vary. It means the right chemical, at the right dosage, with good coverage and timing. The last is critical - the alternatives are calendar application (regular, without reference to incidence levels) and response to census (monitoring) counts.

In my experience it is best to think of a “**campaign**”, that is automatic follow up to a first spray once or even twice, at two week intervals. Generally, I recommend settling in on two successive sprays.

Calendar programmes – do a campaign about every three months (= 4 campaigns per year).

Response programmes – Monitoring trees are located one in each 100 bush “square” (1 row in 10, 1 bush in 10). These are inspected once a month, and if the census bush shows any sign of current *Helopeltis* activity, it is recorded as +^{ve}.

There are various size concepts for the “**application unit**”. **Whole estate fields** can be used. Application is done if some decided threshold is crossed – we have tended to use 30% - *ie*, if 30% monitoring bushes are +^{ve}, the field is subject to a campaign.

Better still is to treat each **individual “square”** as a separate unit – *ie* do a campaign immediately to any “square” that is +^{ve} in that month. In earlier use in Malaysia, we found the average number of campaigns per area was 1 – 1.5 per year. Some squares get several treatments, but many need nothing.

A large **range of chemicals** seems to be effective against the pest, properly applied. The cocoa “balance” seems very stable, and we have not seen serious upsurges of pests suspected of being caused by any of the types of chemicals currently available.

Spraying does not seem to help with **CPB**, however it is done.

Discussion

Mike Rutherford mentioned the mealybug in Africa which transmits **virus**. Since some virus has been detected lately on cocoa in the Far East, this is obviously an issue that needs resolution. DNA analysis can help in this, in virus identification and demonstration of mealybug transmission. Other than swollen shoot virus, there is no strong evidence of serious virulence at this stage.