STEM WRAPPING METHOD FOR THE MANAGEMENT OF COFFEE WHITE STEM BORER

Coffee white stem borer (CBSB), *Xylotrechus quadripes* (Coleoptera: Cerambycidae) is the most serious pest of arabica coffee in India and also South East Asian countries. The adults of white stem borer have distinct flight periods. The females lay eggs in the cracks and crevices on the bark of the main coffee stem. The larvae that hatch out from the eggs penetrate the bark and tunnel/bore extensively inside the trunk and feed on the woody portion and complete the growth. The tunneling in the trunk and roots rapidly kills young plants of up to 7–8 yr old, whereas, older plants may survive for a few seasons, but eventually succumb. The control measures for CWSB include cultural, mechanical, biological and chemical methods namely, maintenance of good shade, tracing, uprooting and destruction of infested plants, removal of loose bark on the trunk and thick branches which discourages oviposition and use of pheromone traps. Chemical application can be done as a last resort.

Many trials have also been conducted by covering (wrapping) the main stem and thick primaries with different materials to prevent egg laying by the adults. The materials used were polythene sheets cut into strips, newspaper, Palmyra leaves, and gunny bag strips etc.

During 2005, 480 plants in an arabica plot at the Coffee Research Sub Station, Chettalli, Kodagu were wrapped using 5 inch wide strips cut from fertilizer bags. Before wrapping all the infested plants were uprooted. The stem wrapped plants remained un-infested for more than three years.

Extensive trials are being conducted from November 2008 at seventeen locations in different zones using polythene and fertilizer bag strips and the results indicate that fertilizer bag strips are cheap and the best. When plants are wrapped with polythene strips, there is accumulation of moisture between the strip and the bark which can lead to development of stem diseases like canker.

It is now recommended that fertilizer bags can be used as the preferred material to wrap the stems of arabica coffee plants to prevent egg laying by the adult coffee white stem borer.

Procedure

Procure used fertilizer bags (usually empty fertilizer bags will be available on the estate itself). Cut 10 to 12 cm (4 to 5 inch) wide strips from the bags. The bags can be opened in such a way that maximum length of the strip is obtained.

It is better to remove infested plants before taking up stem wrapping on the estate. If it is not possible to trace and remove infested plants, then such plants even if wrapped will succumb later as they are already infested. Clear the plants of any sucker growth and dry branches. Start wrapping the plants bottom upwards, from very close to soil level. If

space is left near the collar region, then the borer can lay eggs there. Wrap the fertilizer bag strips in a spiral form without leaving any gaps as shown in the figures below. Care should be taken to wrap the thick primaries also. If not wrapped the beetles may lay eggs on the thick primaries.

Wrapping from the base of the plant

Wrap in a spiral form without leaving gaps

No gaps should be present

A fully wrapped plant

Today, each used fertilizer bag costs about Rs. 4. From one fertilizer bag about six strips can be prepared. To wrap a 25 to 30 year old plant about two fertilizer bags would be required. To wrap one plant it takes roughly 15 to 20 minutes. It is estimated that a worker can do perfect wrapping of about 40 plants per day.

Benefits

The cost of wrapping of plants would work out to about Rs. 10 to 12 per plant if fertilizer bags are purchased and used. Even though the initial cost is slightly high, this would be compensated within a short period as all other measures to manage the borer like tracing, uprooting and destruction or bark scrubbing or chemical application or installation of pheromone traps or lime washing etc. would not be done at least for the next three years.

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