

IPM practices for major coffee pests



Lead Scientist

Mr. Fredrick L. Magina

IPM baseline surveys were conducted in Hai, Moshi, Mbinga, Mbeya, Mbozi and Rungwe, with IPM research gaps highlighted. Advice on proper management of coffee pests found were packaged and promoted. The information was later resynthesized into an IPM Handbook for coffee in Tanzania, published in 2011. A collection of botanical plants with insecticidal/repellent properties was initiated with 11 species. Preliminary bioassay and field tests (Figure 1) were done and results packaged. Indicative dosages for 2 botanicals (*Tephrosia vogelii* and *Azadirachta indica*) were packaged in 2009. One more botanical (*Warburgia salutaris*) was later tested and found to be equally effective. We are looking forward to identify, extract and evaluate the active ingredients (AI) in collaboration with the Tropical Pesticide Research Institute (TPRI).

Management of coffee berry borers (CBB) by use of traps and various attractants was evaluated and packaged. A TaCRI brand of CBB trap, which is a modification of the BROCAP trap developed by CIRAD, was tested and found to be equally effective (Figure 2). On-farm trials were conducted in Lushoto, Mbozi and Bukoba; whereby Methylated spirit, banana juice and local brews (“Mbege”, “Lubisi” and “Degelua”) showed promising results as attractants in all locations. Efforts were initiated to identify naturally occurring parasitoids for coffee berry borer (CBB) at Lyamungu, and two species (*Prorops nasuta* and *Cephalonomia stephanoderis*) were found (Figure 3 a and b respectively). We also found four promising species of Ladybird beetles namely; *Exochomus aethiops*, *Cheilomenes propinqua*, *Cheilomenes lunata* and *Chilocorus circumdata* for control of mealybugs and green scale (Figure 3c). We have just started implementing the rearing protocols for these biocontrol agents, following the training conducted at ICIPE, Kenya.

Priority research area for SAP IV, most of which are brought forward from SAP III, include the following:

- Continue with studies on the management of white coffee stem borer
- Update information on economic pests of coffee in Tanzania
- Undertake pre-outbreak surveillance of new coffee pests eg. Black twig borer

- Appropriate IPM practices for mealybugs in the Southern Highlands
- Use of coloured stickers for the management of leaf miner and thrips.



Figure 1: Efficacy evaluation of leaf fresh extracts for Antestia bugs management in the laboratory & field



Figure 2. TaCRI brand of CBB trap, which is a modification of the BROCAP trap



Figure 3: Bio-agents for CBB (a and b), mealybugs and scales (c) identified at TaCRI, Lyamungu: