

Effectiveness of IPM (Insect Pest Management) integrated control strategies in the control of fruit flies (Tephritidae) from three agro-ecological zones of Côte d'Ivoire

Authors:

Minhibo Magloire Yves¹, Akpessa Akpa Alexandre Moïse², Coulibaly Tenon³, Koua K Hervé⁴, Aby N'goran⁵, N'depo Robert⁶, Hala N'klo⁷ and Coulibaly Adama⁸

Institution:

^{1,5,8} National Center for Agronomic Research, Korhogo-Lataha Station, Korhogo, Bp 856 Côte d'Ivoire,

^{2,4}Laboratory of Zoology and Animal Biology, UFR-Biosciences, Felix Houphouët-Boigny University, Abidjan, Côte d'Ivoire.

³Department of Zoology and Animal Biology, UFR Biological Sciences, Péléforo Gon Coulibaly University, BP 1328, Korhogo, Ivory Coast

⁶Jean Lorougnon Guédé University (UJLG), Daloa, Côte d'Ivoire

⁷National Center for Agronomic Research, Station Marc Delorm, Côte d'Ivoire

Corresponding author:
Minhibo Magloire Yves

ABSTRACT:

The mango is the top second fruit exported by Côte d'Ivoire. More than 95% of the exported volumes are destined for the European market. This production was confronted with many sanitary problems such as the damage of fruit flies which are formidable insect pests of mangoes and other fruits in Côte d'Ivoire. In order to effectively control fruit flies, a test to evaluate the effectiveness of combining different IPM methods was carried out in the three agro-ecological production zones of mango. In each zone, the four combinations were tested in comparison with a control orchard that did not receive any IPM technologies. Four fruit samples were taken: one at the beginning, two in the middle and one at the end of the experiment. A total of 100 mangoes were randomly collected from each orchard. Those that were pitted were counted and incubated in the laboratory. The results obtained from the three areas showed that the level of mango infestation was low in the orchards where the combinations were tested *viz*: sexual attractant trapping + Food bait (GF-120) + Sanitation (0.1 pupae/fruit); Sanitation + Food bait (0.25 pupae/fruit); Sexual attractant trapping + Sanitation (0.3 pupae/fruit); Sexual attractant trapping + Food bait (0.45 pupae/fruit) respectively. On the other hand, in the untreated plots, infestation levels were high (6 pupae/fruit). In addition, the protection percentages revealed that the sexual attractant trapping + food bait + sanitation system recorded the highest percentage of orchard protection (95%). Next came sanitation + GF-120 combination (92%), followed by sexual attractant trapping + sanitation" (90%) and sexual attractant trapping + GF-120 (88%) combinations. However, statistical treatments ($P>0.05$) showed that there was no significant difference between the percentages of protection.

Keywords:

Agro-ecosystem, Integrated pest management, Tephritidae, Cote d'Ivoire.