

Studies on the effects of planting materials, weevil trapping, and intercropping on the banana weevil *cosmopolites sordidus* Germar. and crop yields were conducted in western Kenya from 1994 to 1997. The objectives of the investigations were to explore the efficacy of non-pesticidal options for the management of the banana weevil. Field experiments were undertaken using clean planting materials, pseudostem traps for the weevil management and intercropping banana with groundnuts *Arachis hypogaea* L. different banana plant densities.

Results indicate that paring and hot water treatment is effective in cleaning infested banana planting material. It did not affect the banana growth and yield performance.

The infested planting material resulted into significantly high weevil damage and yield losses within two crop cycles compared to the infested but pared and hot water treated material. The lowest damage of 12.6% was recorded under furadan protection while the highest damage of 66% was in the infested suckers. The infested, pared and hot water treated material suffered 17.6% damage while in the healthy material it was 16.3% during the three crop cycles. The banana bunch yield under insecticide protection was 14.5 kg and in the healthy plant it was 15.3 kg whereas the infested, pared and hot water treated material yielded 13.3 kg. These weights were not significantly different from each other but differed significantly from each other but differed significantly from the infested materials yield of 6.8 kg. The associated yield losses were 53.1% in the infested materials, 16.6% under paring and hot water treatment and 8.3% under insecticide protection.

The use of split pseudostem traps for weevil management at low weevil population density significantly reduces the number of adult weevils and larval damage caused. However, trapping where the infestation and resulting damage is already high may not result into significant population decrease and yield responses.

Intercropping banana with groundnut did not affect weevil colonizing the banana but influenced their distribution during the early stage of the banana establishment. The banana crop planted at 3x3m and 5x5m spacing did not affect the growth of the groundnut during the first one year. Thereafter, the banana canopy significantly reduced the growth and yield of the groundnuts in the 3x3x banana spacing. Nevertheless, spacing significantly influenced the banana yield per unit area with the 3x3m banana spacing yielding more than double that of the 5x5m spacing. The number of flower thrips and aphids were reduced in the banana intercrop compared to those in the groundnut monocrop.

Incorporation of organic mature improves the banana performance. Nevertheless, with increased bunch weight snapping of the banana became significant due to the weakened corms.

Thus, the use of clean planting materials, weevil trapping and application of organic manure are essential components of banana weevil integrated management.