Efficacy Of Selected Botanical Pesticides Against Red Spider Mite, *Tetranychus telarius* And Aphid, *Aphis Gossypii* On Cotton

(Kambo *et al.*, 2012)

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Introduction

- In Kenya, cotton is grown mainly in Eastern, Central, Nyanza, Coast ,Western and Rift Valley regions.
- Production potential commercial variety, HART 89M range from 4000 kg ha^{-1} (Research) to 900 kg ha^{-1} in Farmers' field.
- Pest management by use of synthetic pesticides account for about 32% of the total cost of production.
- Botanical pesticides are environmentally friendly and affordable to small scale farmers

Important Pests of Cotton

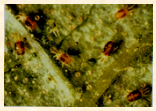
Helicoverpa armigera

- Major problem occur during fruiting stage of cotton
- Attack coincides with the formation of squares
- Infestation can cause up to 100% yield loss, if left unchecked

Important Pests of Cotton Cont…

Tetranychus telarius

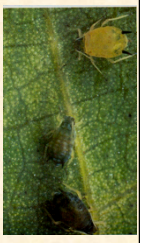
- *T. telarius* become a major problem during the dry spell between January and March
- Heavy attack- leaf reddens, becomes covered with webbing, withers and shed off
- Severity of damage by *T. telarius* depends on
  - Prevailing weather conditions- dry weather conducive
  - Insecticides sprayed for the control of *H. armigera-Synthetic pyrethroids*
- Serious attack if unchecked by spraying expensive miticides may lead to total loss of entire crop



Important Pests of Cotton Cont…

Aphis gossypii

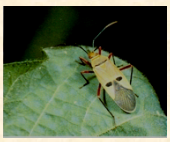
- *A. gosypii* become a major problem during the dry spell between January and March
- Heavy attack leads to leaves cupping and distortion
- Drops of sticky honeydew and/or patches of sooty mould form on upper side of leaves
- Severity of damage by *A. gosypii* depends on prevailing weather conditions- dry weather conducive
- Serious attack may lead to heavy yield losses and poor quality cotton

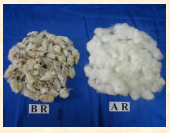


Important Pests of Cotton Cont…

Dysdercus spp.

- *Dysdercus* spp. appear during splitting of the bottom and top crop
- Causes abortion of small green bolls due to death of seeds
- Causes yellow staining on the developing cotton lint inside the bolls
- Low quality Grade BR is mainly caused by stainers





Integrated Pest Management

- IPM including pesticides, cultural, biological and resistant cultivars is the most ideal cotton pest management strategy
- Control measures for mites and aphids– especially by use of synthetic pyrethroids kill natural enemies leading to pest population explosions.
- Use of botanical pesticides as a component of IPM is highly acceptable

Objective

- To evaluate the efficacy of selected botanical pesticides against red spider mite and aphids on cotton

Justification

- Collapse of cotton production from 70,000 bales in 1985 to less than 20,000 bales in 2000
- Pest management by use of synthetic pesticides take up about 32% of production costs
- Botanical pesticides are affordable to small scale farmers

Materials and Method

Treatments

- Tobacco LP
- Pyrethrum FP
- Garlic Cloves
- Ageratum LP
- Neem LP

Materials and Method

Treatments

- Melia LP
- Sodom apple LP
- Custard apple LP
- Sodom apple F
- Achook EC

Materials and Method

Treatments

- Bulldock Star EC
- Omite EC
- Paraffin + Teepol
- Control (Inside)
- Control (Outside)

Experimental Design and Layout

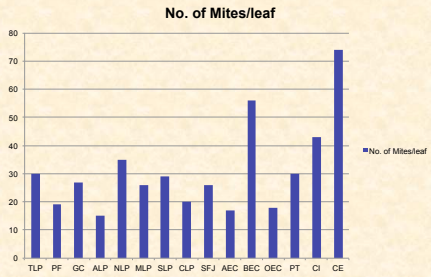
- 4 replications
- Experimental Design RCBD
- 15 treatments
- 5 x 5m plot size
- 3m between blocks
- 2m between plots within block
- 70 plants per plot @ 30 x 100cm

Botanicals

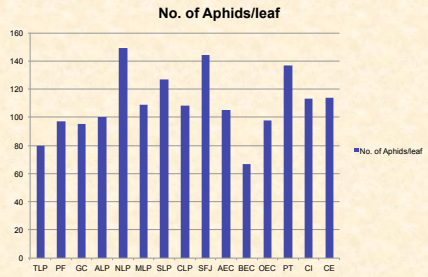
Sodom apple

Ageratum spp.

Results (Mites)



Results (Aphids)



Results (Mites)

- Persistent use of synthetic insecticides lead to heavy mite damage

Acknowledgement

- Director, KARI
- KAPAP
- KARI Support Staff


Thank you