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African Insect Science for Food and Health

Evaluation of Different Management Options Against Fall Armyworm

By;

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Introduction



- More than 40 species of insects have been recorded on maize in the field.
- *S. frugiperda* , is one of the major insect pests causing substantial yield losses of maize.
- FAW is a key pest of maize and many other crops throughout in the United States.
- It was first detected in Africa (Nigeria) in 2016.
- It attacked more than 20 African countries within a year.

Statements of the problem



- The pest damaged more than 217,218 ha of maize crop in Ethiopia.
- To control *S.frugiperda*, MoA distributed more than 100,000 liters of insecticide.
- Even though, the efficacy of the insecticide is under questions.
- There is no FAW control method at the moments.

Objectives

- To Screen the efficacy of
 - ✓ Insecticides
 - ✓ Bio-pesticides
 - ✓ Botanicals
 - ✓ Pheromone trapsagainst fall armyworm.
- To determine the parasitoids associated with fall armyworm.

Screening of synthetic insecticide against FAW

Treatments

1. Coragen 200 SC (Chlorantraniliprole)
2. Radiant 120SC (Spinetoram)
3. Dimethoate 40% (Agro-Thoate 40% EC)
4. Tracer 480 SC (Spinosad)
5. Belt SC 480 (Flubendiamide)
6. Karate 5EC (lambda-cyhalothrin)
7. Dursban 48% EC (chlorpyrifos-ethyl)
8. Malathion 50% EC and
9. Control

screening...

- Location: MARC/Hawassa
- Design: CRD
- Maize will be planted in pot under a glasshouse condition.
- It will be sown at a density of five plants per pot.
- Replication: 3Times
- Ten (10) first instar larva per pot will be released.

Data to be collected

- ✓ Number of egg,
- ✓ Number of live larvae
- ✓ Number of pupa.
- ✓ Damage rating

Bi-pesticide

➤ *Beauveria bassiana*

PPRC-ZG3

DLCO-EA-41

DLCO-EA-90

PPRC-9604

DLCO-EA-80

DLCO-EA-76

PPRC-9606

DLCO-EA-56

- *Metarrhizim anisopliae*
 - PPRC-51*
 - PPRC-2*
 - DLCO-EA-69*
 - PPRC-40*
 - PPRC-HB4*
- *Bacillus thuringiensis*

Botanicals

- *Azadirachta indica*
- *Militia ferruginea*
- *Phytolacca dodecandra*
- *Jatropha curcas*

Cont...

- ✓ Location: Adis Ababa/MARC
- ✓ Design: CRD
- ✓ Three FAW larvae per plastic container will be placed.
- ✓ Replication: 3 times.

Data to be collected

- ✓ Larval mortality will be recorded at 24, 48, 72 and 96hrs after treatment application.

Screening of Pheromone lures for their efficacy

Treatments

1. *Z-7-Dodecenyl Acetate* (Z-7-12OAc)
2. *Z-9-Tetardecenyl Acetate* (Z-9-14OAc)
3. *Z-11-Hexadecenyl acetate* (Z-11-16OAc)
4. *Z-9 Dodecadienyl acetate* (Z-9-12OAc)
5. Control (trap without lure)

cont...

- Location: Hawassa/Jimma
- Treatments will be arranged randomly in 1 ha of maize field.
- It will be replicated four times.
- Traps will be hung approximately 1 m above the ground on wooden stakes.
- All lures will be changed monthly.
- Trap captures will be recorded every 5 days.

Assessment of the parasitoid enemies of FAW in Ethiopia

- ✓ The egg and larvae will be collected from infested maize.
- ✓ Eggs will be placed in petri dish (diameter 15 cm).
- ✓ Larvae will be placed individually in plastic containers with diet.
- ✓ Plastic containers will be examined daily.

Expected Output

Potential

insecticides
bio-pesticides
botanicals
pheromone lure and
parasitoids

will be identified and used
as the control of FAW.

THANKS A LOT!

Acknowledgment



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