

Introduction

- The South American tomato pinworm, *Tuta absoluta* is native to South America^{1,3}.
- The pest has spread to various parts of the world including Europe, Asia and Africa².
- Traditionally insecticides have been used to manage this pest including in its native range
- In Kenya, the pest was introduced around 2014.



Fig.1. Image of *T. absoluta* and its feeding marks on a tomato fruit.

Hypothesis and objectives

Objective

- Survey to investigate IPM practices used by farmers to manage *T. absoluta* in collaboration with Virginia Tech.

Hypothesis

- Kenyan tomato farmers primarily use insecticides to control *T. absoluta*.

Methods

- The survey was conducted in 4 counties in Kenya: Kirinyaga, Nyeri and Tharaka-Nithi.
- Tablets formatted with the questionnaire were used in the survey using Kobo Toolbox software.
- A total of 400 farmers were sampled.
- Only farmers who had grown tomatoes for the last 12 months were interviewed.
- Basic analysis were done on excel.

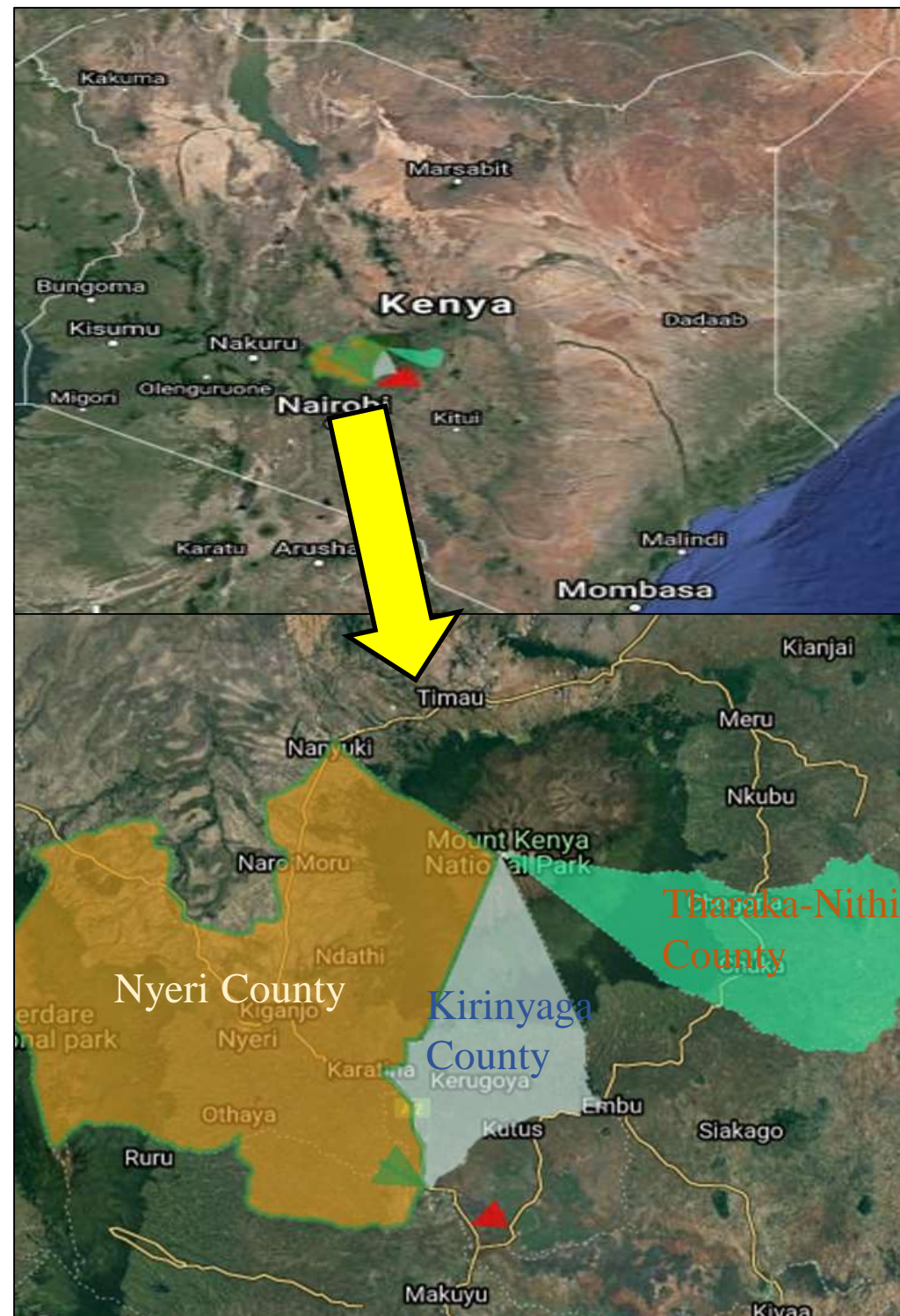


Fig.2. The counties where the survey was conducted, Nyeri county, Kirinyaga county and Tharaka Nithi

Results

- *T. absoluta* is the has become second most important tomato pest since its introduction.
- Most of the farmers used diamides to manage *T. absoluta*.
- Most farmers used insecticides and very few used IPM techniques like biological control to manage *T. absoluta*.

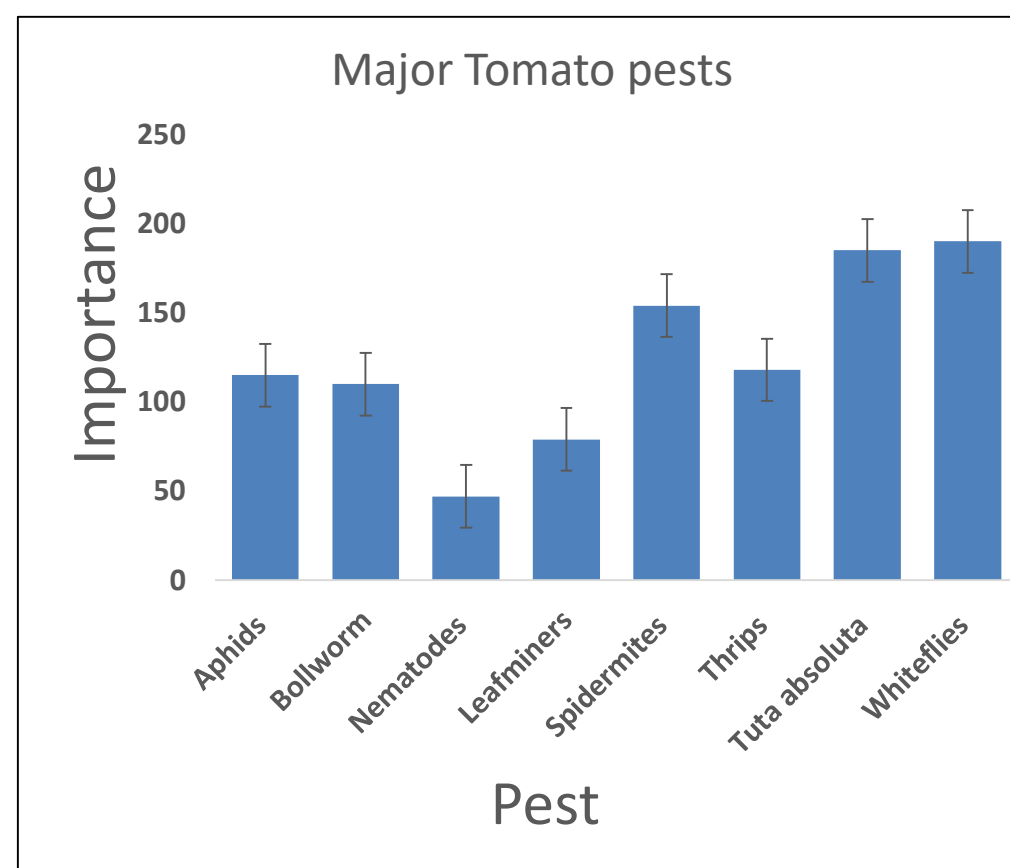


Fig. 3. Shows the common insecticides classes used by famers

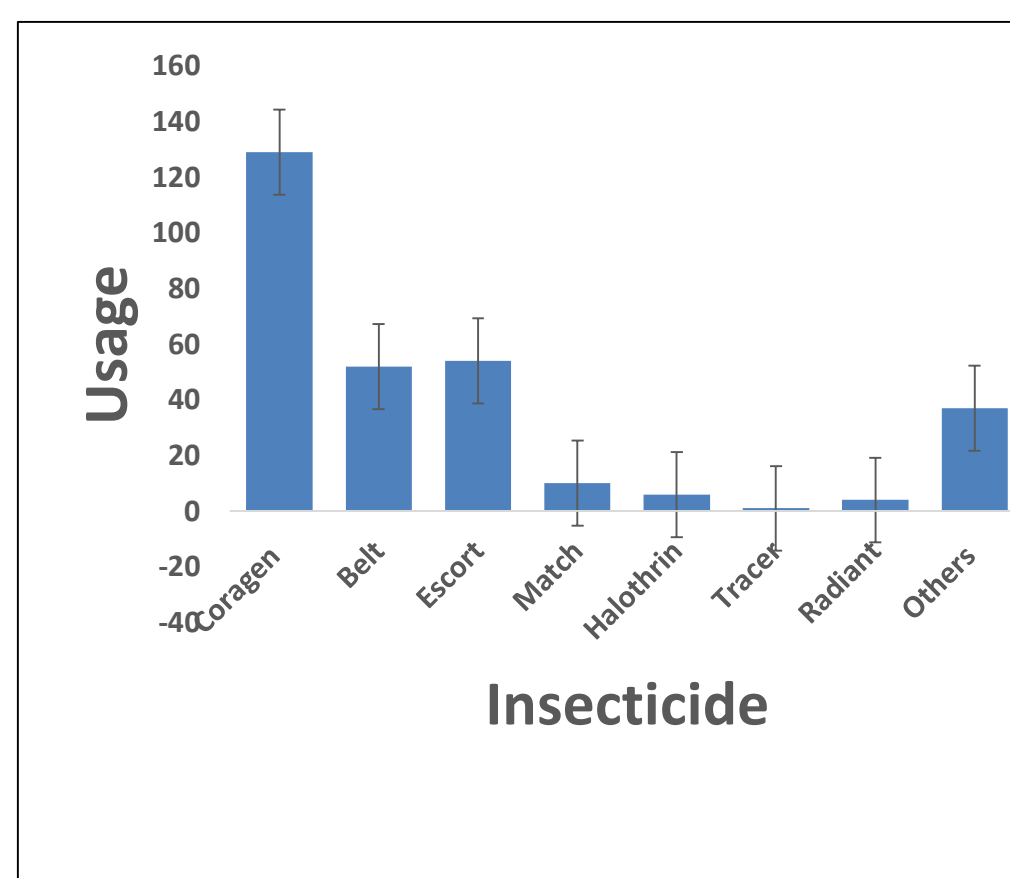


Fig 4.Results of the survey showing the importance of various tomato pests and the insecticides used to control *T. absoluta*.

Discussion

- Farmers predominantly used insecticides to control *T. absoluta*.
- The widely used insecticides were diamides, organophosphates and pyrethroids.
- This could have adverse effects on beneficial insects, and possible insecticide resistance build up.

Future Directions

- Efficacy trials for the insecticides used by famers.
- Assessment of the impacts of the heavy insecticide usage by farmers on environment, beneficial insects and possible insecticide resistance development.

Literature Cited

1. Biondi et al.,2018. Ecology, worldwide spread, and management of the invasive South American tomato pinworm, : Past, present, and future. *Annual Review of Entomology*, 63(1), 239-258.
2. Desneux et al .2018.The invasive south American tomato pinworm, *Tuta absoluta*, continues to spread in afro-Eurasia and beyond: The new threat to tomato world production. *Journal of Pest Science*, 84(4), 403-408.
3. Roditakis et al .2017. A four-year survey on insecticide resistance and likelihood of chemical control failure for tomato leaf miner *Tuta absoluta* in the European/Asian region. *Journal of Pest Science*, 91(1), 421-435.

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1. Biondi et al.,2018. Ecology, worldwide spread, and management of the invasive South American tomato pinworm, : Past, present, and future. *Annual Review of Entomology*, 63(1), 239-258.
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