Survey of pests infesting amaranth and African nightshades in Kenya and their natural enemies

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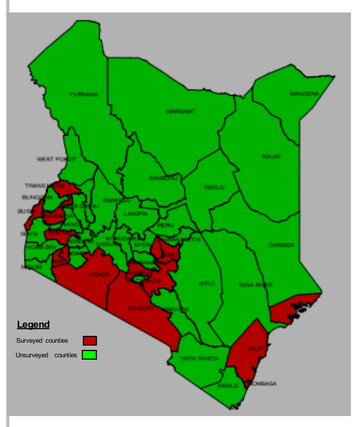
INTRODUCTION

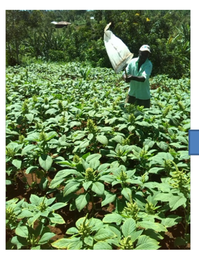
- Leaf amaranth and African nightshades are among the most consumed indigenous vegetables in the East African region.
- However, production is faced with several challenges, key among them being attack by arthropod pests.
- Until now, a comprehensive survey for pests of the two crops in the region had not been undertaken.
- The survey findings are important in identifying the key pests to address and the potential natural enemies that could be used for their management.

OBJECTIVES

- Determine the major pest groups of leaf amaranth and African nightshades in various regions in Kenya.
- Assess damage caused by key arthropod pests on leaf amaranth and African nightshade in Kenya.
- Study the natural enemy complex for the two crops in the surveyed areas.

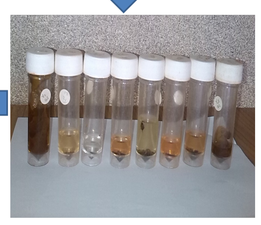
METHODS

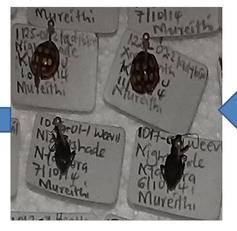



Sweep netting method


Beating/picking method


Rearing of live samples


Sample preservation


Sample mounting


Sample identification

RESULTS

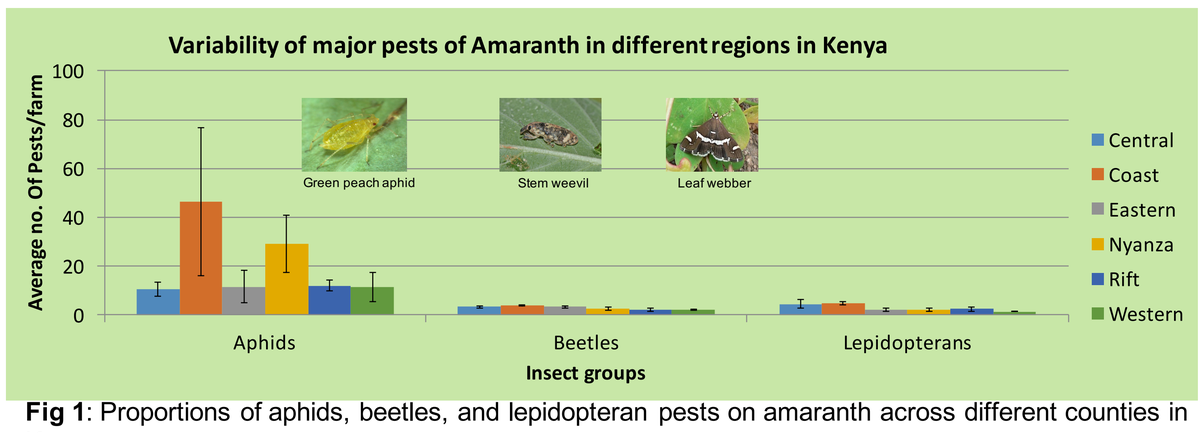


Fig 1: Proportions of aphids, beetles, and lepidopteran pests on amaranth across different counties in Kenya

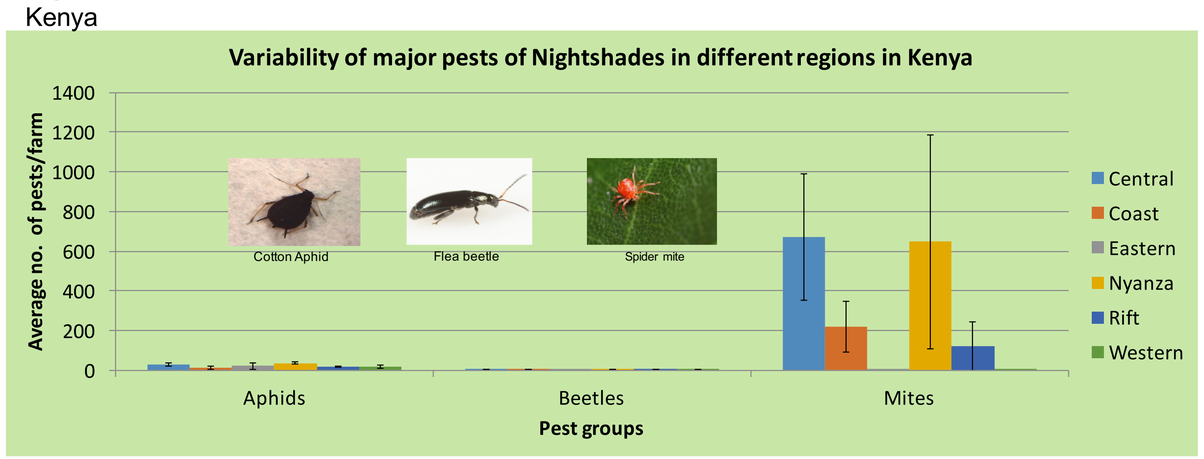


Fig 2: Proportions of aphids, beetles, and mites on African nightshades across different counties in Kenya

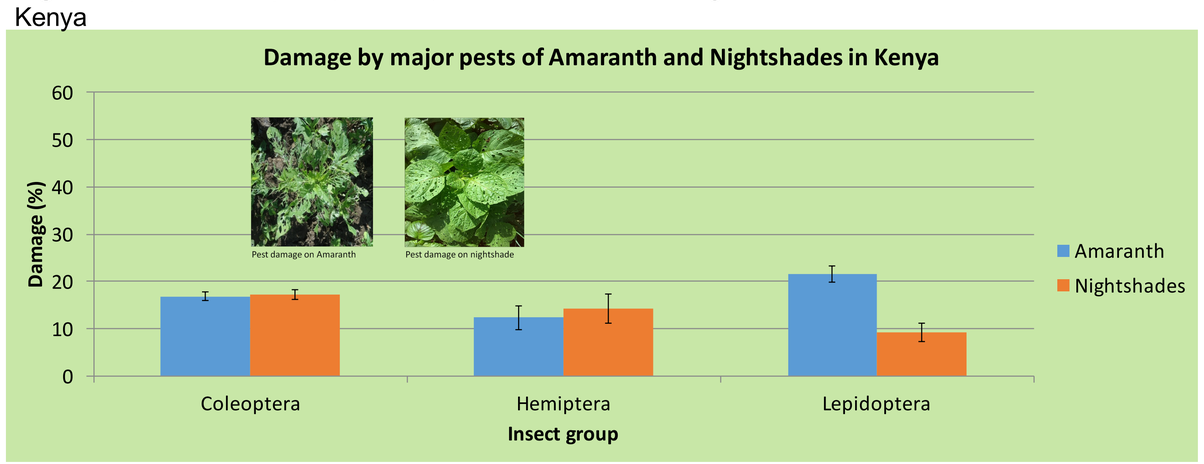


Fig 3: Damage caused by coleopterans, hemipterans and lepidopterans on amaranth and African nightshades in Kenya

CONCLUSIONS

- Although the population of aphids was higher than that of lepidopterans in amaranth, more damage from lepidopterans was observed, and this could be due to greater damage level caused by an individual lepidopteran compared to an aphid.
- Warmer temperatures and more intense cultivation of amaranth in Coast and Nyanza regions of Kenya could have contributed to higher aphid population as compared to the other regions.
- Higher damage by aphids on nightshades as compared to amaranth could have been due to higher virus transmission by *Aphis gossypii* in nightshade.
- Cooler temperatures at the high altitude zones favour high population of flea beetles on nightshades.

IMPACT

- Lepidopterans (leaf webbers and leaf worms), coleopterans (stem weevils), and homopterans (aphids) are the major pests of amaranth in Kenya.
- Homopterans (aphids), coleopterans (flea beetles), and mites are the major pests of African nightshades in Kenya.
- Management solutions to the major pests identified during the survey will contribute towards reducing losses during the production of these vegetables.

REFERENCES

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