INTEGRATED PEST MANAGEMENT FOR WHITEFLY (INZI MWEUPE) AND SOUTH AMERICAN TOMATO PINWORM (KANTANGAZE) ON SOLANACEOUS VEGETABLES IN TANZANIA

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INTRODUCTION

Vegetables play a vital role in the economy and nutrition of smallholder farmers in both rural and peri-urban areas of Tanzania. Solanaceous vegetables especially tomato and sweet pepper are key horticultural crops for improving livelihood of most farmers. The income from tomato sales is used for other family needs including purchase of food stuffs. However, production of these crops is constrained by infestation of a plethora of insect pests; of which whitefly (*Bemisia tabaci* Genn.) and South American pinworm (*Tuta absoluta* Meyrick) are the most damaging pests.
We evaluated the efficacy of screen houses and a biopesticide (Metarhizium anisopliae) against *B. tabaci* and *T. absoluta* in farmers' fields in Babati district, Tanzania.

TREATMENTS

The study was conducted from February to June 2017 (the rainy season) in Matufa, Shaurimoyo and Bermi Villages of Babati District. Tomato variety Tengeru 2010 and Sweet pepper (Yolo wonder) were used as test crops, in open fields or under screen houses. Metarhizium anisopliae was applied in the biopesticide treatments, as described below;

TBio-OP: Tomato with biopesticide in open field	**Swbio-OP:** Sweet pepper with biopesticide in open field
TBio-SH: Tomato with biopesticide in screen house	**Swbio-SH**: Sweet pepper with biopesticide in screen house
TBio-OP: Tomato without biopesticide in open field	**Swbio-OP:** Sweet pepper without biopesticide in open field
TBio-SH: Tomato without biopesticide in screen house	**Swbio-SH:** Sweet pepper without biopesticide in screen house

RESULTS

Based on marketable yields, there were differences between tomato and green pepper responses to treatments.

- Growing tomatoes in the screen house increased both gross and marketable yields (Figures 1 A & B). For marketable yield, there was no need of adding a biopesticide.
- Growing sweet pepper in the screen house increased marketable yields but with complementary application of biopesticides (Figure 2B).

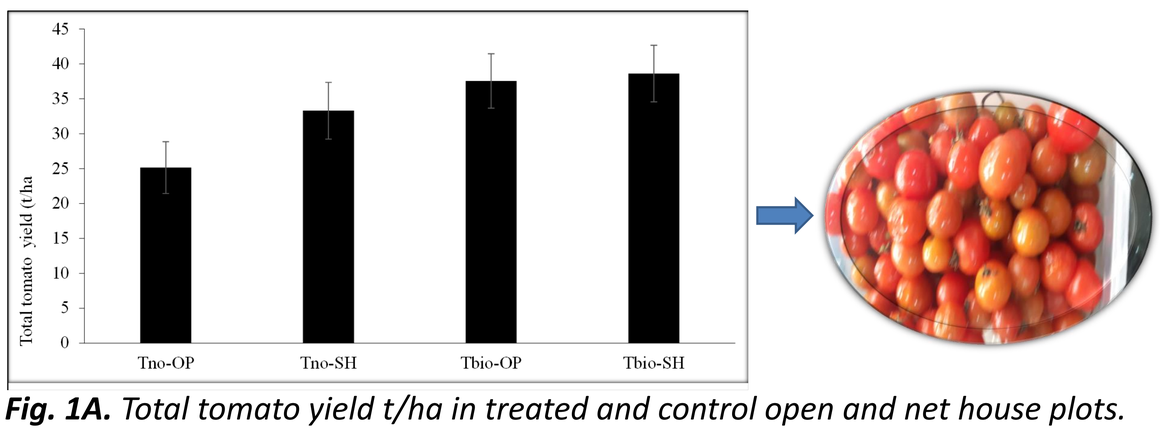
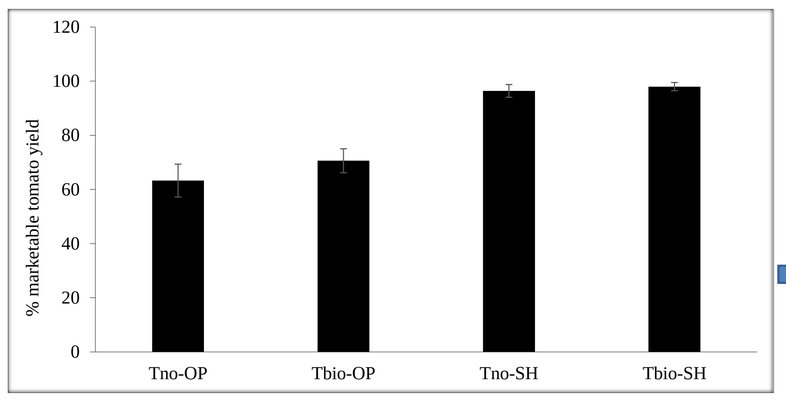


Fig. 1A. *Total tomato yield t/ha in treated and control open and net house plots.*



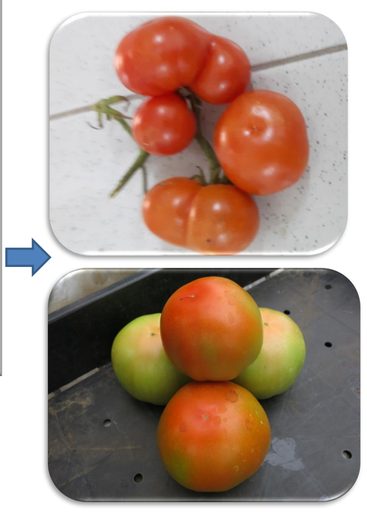


Figure1.B. *Percentage of marketable tomato yield after sorting out T.absoluta damaged fruits indicated by excavating holes.*

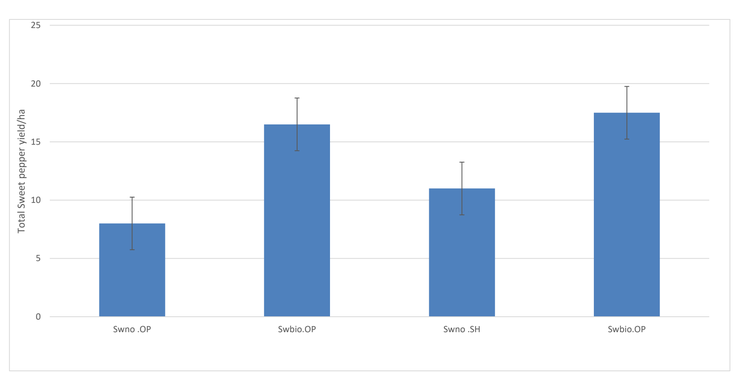


Fig. 2A. *Total sweet yield/ha in treated and control open and net house plots.*

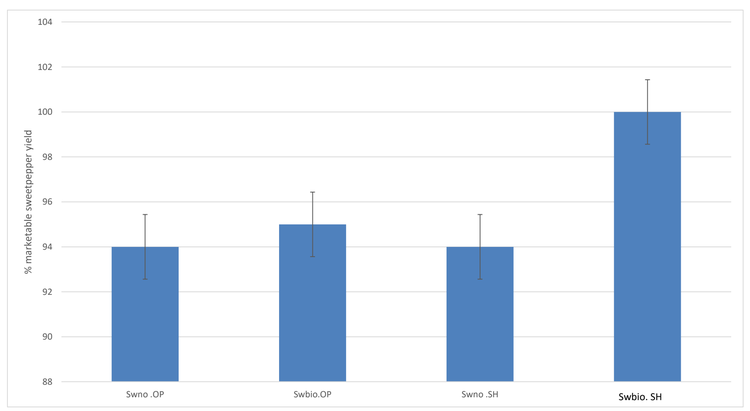


Fig. 2B. *Percentage of marketable sweet pepper yield after sorting out diseased fruits due whitefly.*

CONCLUSION

Growing of vegetables in screen houses increases their marketable yields but will require integration with biopesticides in selected vegetables like green pepper.

PARTNERS INVOLVED

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