Effect of Sisal (Agave Sisalana) and Sweet Thorn (Acacia Karroo) Ethno-Medicinal Extracts on Prevalence of Selected Pests and Diseases in Assila F1 Tomato Variety

Mr. MAGANDA FARUK [1], Ms. ACERO MIRIA [1], Dr. BYALEBEKA JOHN [1], Dr. Joseph Ssekandi [2], Dr. Marius Murongo [3]

1. 1Faculty of Agriculture, Uganda Martyrs University, P.O. Box, 5498, Kampala, Uganda., 2. Africa Center for Agroecology and Livelihood Systems, Uganda Martyrs University, 3. Uganda Martyrs University

Introduction

This study compared the efficacy of sisal (*Agave sisalana*) and sweet thorn (*Acacia karroo*)ethno-medicinal extracts on prevalence of selected pests and diseases in Assila F1 tomato variety was carried out in order to provide cheap and safe alternative in controlling tomato pests and diseases.

Methodology

A 13x13m complete randomized block design with nine replicates was used to determine the prevalence of tomato pests and diseases. The assessment was done at organic demonstration site of Uganda martyrs university using three treatments; sisal extracts, sweet thorn extracts and control. Healthy tender leaves of sisal and sweet thorn were harvested and 10kgs of each treatment were measured and chopped into small piece, crushed then 5litres water was added. The prepared mixtures were then shaken and sprayed uniformly onto the tomato plants in the plots to which they were assigned to at a 4 days interval starting from one to eight weeks 8interval after transplanting for 8 times. Meanwhile control plants were not sprayed. Each replicate had 20 plants and 10 plants were selected for data collection in each replicate. Agronomic traits were evaluated by measuring plant height, stem girth,leaf length,leaf width, leaf length using ametre rule. Final fruit yield was measured by weighing mature tomatoestomatoes. Pests were assessed as follows; whiteflies were assessed by counting the adult white flies. Aphids were assessed using a pest scoring scale of 0-5;African bollow worm is assessed using a scoring scale of 1-5. Disease severity was assessed as below; early blight and late blight severity was assessed using ascale of 1-4 .Bacterial spot severity was scored using the scale of 1-6 and then powdery mildew severity was estimated using a disease scoring scale of 0-5. The analysis of variance (ANOVA) at(P<0.05) was carried and means were compared using LSD.

Results & Discussion

The results of the study indicated thet there was significant (P<0.05)diferences recorded between sisal and sweet thorn ethno medicinal extracts for pest prevalence. The lower mean for white flies (0.78), tomato fruit borer (1.3) and aphids (0.86) and red spider mites(0.3) prevalenece score were recorded for sisal ethno medicinal extracts than sweet thorn extracts but lower than the control plots. There was significant differences (P<0.05) observed between of application of sisal and sweet thorn ethno medicinal extracts for disease prevalence. The lower mean for early blight (1.1), late blight (1.6), bacterial spot (1.1)and powedery mildew severity (1.8) severity scores were recorded for sweet thorn ethno-medicinal extracts than sisal extracts but lower than the control plots. The results of the study revealed that application of sisal extracts significantly (P<0.05) increased plant height, stem girth, leaf length, leaf width and final fruit yield. Application of sisal and sweet thorn ethno- medicinal extracts significantly (P<0.05) showed an effect on the yield components and yield of tomatoes. The higher final