Sweetpotato for Profit and Health Initiative (SPHI)
Sweetpotato Seed System and crop management Community of Practice (SSS-CoP)
Summary of online Discussion

TOPIC 20: Sweetpotato weevil management?

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Introduction

Sweetpotato weevil is the most serious pest of sweetpotato, with reported losses ranging from 5% to 80% worldwide. The larva, which feeds both on stems and roots, is the most destructive stage of the insect. The control of sweetpotato weevil has met some degree of difficulties. It's presence inside the tubers protects it from contact pesticides and most arthropod natural enemies. As part of integrated pest management, numerous chemical insecticides have been tested for the control of sweetpotato weevils. Control achieved by post planting application of chemical insecticides appears to be due to mortality of adult weevils in search of feeding sites. Movement of the adult weevil may facilitate the contact between the toxicant and the insect, thereby resulting in insect mortality. This method may require frequent application for it to be effective. However, frequent application of insecticides is not cost effective, hence not making economic sense to smallholder farmers due to the low market price of sweetpotato in most countries in Africa. In addition, a high proportion of these chemicals may be toxic and may have adverse effects on human health, wildlife, local food sources such as cattle or fish, beneficial insects and biodiversity. Will researching in innovative and cutting edge non-chemical pest management approaches be a breakthrough that will strike a balance between improving smallholder farmers livelihood through improved yields and sustainable environmental management?

Sweetpotato weevils: Which way forward?

Apart from virus infection and its attendant implication on root production, weevil infestation is another important production challenge encountered by sweetpotato farmers. Although significant efforts have been made towards addressing the weevil challenge, not much has trickled down to on-farm application by farmers. Part of the problem is that most farmers in sub-Saharan Africa tend to ignore the issue, mainly because they can still take damaged roots to the market and sell. Most of weevil damage in sweetpotato occur on the root surfaces and consists of unattractive scars and holes. Unlike developed countries where market tolerance for this cosmetic injury is very low, most consumers in SSA tend to ignore the scars. However, there are times when weevil damage is

too severe to the extent of drastically reducing marketability of the crop. The most common recommendation for weevil management is to ensure proper watering/planting when there is enough rainfall and harvesting in time (before the dry season sets in). However, timely harvesting is sometimes not possible due to the common practice of piecemeal harvesting. Countries with commercial sweetpotato systems recommend scheduled application of insecticides on production fields. This might be costly for subsistence systems hence the need to identify and disseminate a wider array of cultural control measures.

In subsistence production systems sweetpotato farmers harvest their roots piece meal in a bid to escape the glut period of roots or when they need the roots for household consumption. Late harvesting (which usually occurs during dry seasons) however predisposes the roots to weevil infestation resulting to loss of roots. Cultural practices have proven to reduce weevil infestation. Studies on evaluation of in-ground storage of different varieties (5 varieties) under cured and uncured environment revealed that roots can be left in-ground (in-situ) for one to two months with minimal damage by weevils or rots. The procedure involved removal of haulms at maturity, earthing up and firming the ridges or mounds to close the cracks that could create access to weevils to get to the roots. The harvest of roots can be delayed for 1 to 2 months during the dry season with less than 2% and 7.2% weevil damage respectively on the average. However, varieties differ on the level of sustainability with shallow rooted varieties being more prone to weevil damage.

Various chemical pesticides, bio-pesticides, agronomic manipulations and other biological control measures have been recommended for controlling weevil infestation. However, what is not clear is the level of adoption of this control measures by smallholder farmers in Sub-Saharan Africa. There is need to ask ourselves the following questions:

a) What is the level of adoption of the recommended weevil control measures by sweetpotato farmers in SSA?
b) Have we made enough efforts towards educating farmers on the devastating effects of sweetpotato weevils and recommended control measures, why is it that the recommended control measures are yet to trickle down to on-farm application by farmers?
c) Should there be consideration for allocation of more time and resources towards research, training and awareness creation on weevil management?

There is need for an effective non chemical weevil control measures. Breeding for weevil resistant sweetpotato varieties should be a major focus area. Considering the impact of chemical pesticides on the environment and the food chain, emphasis should be placed on other non-chemical control measures such as irrigation, use of weevil free vine cuttings, hilling-up of soil around the base of the plant, crop rotation, use of appropriate planting and harvesting dates, proper farm sanitation, bio-pesticides and other agronomic practices. It is also important to consider strategies such as quarantine when it comes to movement of planting material. This has worked well in the USA, but will it succeed in Africa given the subsistence nature of sweetpotato farming?

Summary on the respondents:

Duration	No. of contributions	No. of unique respondents	No. and type of institutions	Number of countries
26/6/2019 – 11/7/2019	5	5 (5 male and 0 female)	NARIs: 2 CIP: 3	4 (Kenya, Nigeria, Tanzania and Uganda)

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