EVALUATION OF PROGRESS REPORT AND GENERAL PROGRESS
EVALUASIE VAN VORDERINGSVERSLAG EN ALGEMENE VORDERING

Project Number *Projeknommer*	M131/60	Report Year *Verslagjaar*	2012/13
Project Title *Projektitel*	Insect biodiversity and abundance in soybeans (*Glycine max*)		
Responsible Officer *Verantwoordelike Beampte*		J. Truter	
Commencement date *Aanvangsdatum*	2012	Expected Completion Date *Verwagte einddatum*	2013
Nature of Report *Aard van Verslag*		Progress	

Data collected/Data in*gesamel*

Arthropod biodiversity data were collected on herbicide-tolerant and conventional soybeans.

Value of project/Waarde van projek

By determining the arthropod diversity, farmers can make an informed decision on control methods and know which species can become possible pests as well as the beneficial arthropods that will occur.

Recommendations/Aanbevelings

This project should continue to confirm the results found during this study. More sites with conventional fields are needed for comparative data.

Acknowledgement/Erkenning

Partial funding of this project by the Protein Research Foundation is acknowledged.

29/10/2013

Date/*Datum*

Programme Manager/*Programbestuurder*

04/11/2013

Date/*Datum*

R&T Manager/*N&T Bestuurder*

DETAILS

Project number		Progress report M131/60
Project title		Insect biodiversity and abundance in soybeans (*Glycine max*)
Project manager		J Truter
Co-worker(s)	Internal	Dr A Erasmus, Ms AS de Beer, Ms MM du Toit, Ms UM du Plessis, Mr SF Grobler
	External	Prof J van den Berg (NWU Potchefstroom)

Abstract

Soybean importance has increased over the past few growing seasons in South Africa, due to its suitability as rotation crop with maize. Due to this production increase, it is important to assess arthropod biodiversity in soybean and to determine base line date for future use in assessments of the possible effects of genetically modified soybean or changes in crop production practices, on arthropod communities. A better understanding of which species occur on soybean may also advance the ability to develop integrated pest management strategies. Several arthropod biodiversity studies have been conducted internationally related to biodiversity in soybeans, but a lack of similar information exists in South Africa. From these studies it can be concluded that the complex of insects that inhabit soybeans is large and diverse. The aims of the study were to compile a list of arthropods which occur on soybean plants and to compare the diversity and abundance of arthropods on herbicide-tolerant and conventional soybeans. Future pests and possible economically important arthropods were identified from the list through an Ecological Risk Assessment (ERA) model approach. Surveys were done at Brits and Potchefstroom during the late 2012/13 season, in which arthropods were collected from soybean fields over a four-week period. In total 6,175 arthropods individuals were collected, comprising 169 morpho-species and 13 orders. The diversity indices indicated no differences between herbicide-tolerant and conventional soybeans for total arthropod diversity in Potchefstroom, but there was, however, a significant difference for the number of individuals between herbicide-tolerant and conventional soybeans in the Potchefstroom area. Knowledge and understanding of the entire soybean system, not the pest alone, should increase if integrated pest management systems for soybeans are to be developed and implemented.

Keywords *Arthropods, Biodiversity, Ecological risk assessment, Soybeans*