Evaluation of Performance of Different Potato Seed Types Grown in Khartoum State

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Dedication

To my mother... Setalgeel
To my father ... Mohamed
To my honey wife... Salma
To all my sisters....
To all my Brothers...
To those whom I always respect in everywhere

Ayman
2012
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ABSTRACT
Evaluation of performance of different potato seed types grown in Khartoum State

Two experiments were conducted during winter seasons of 2009/2010 and 2010/2011 at the Experimental Farm of the College of Agricultural- Studies, Sudan University of Science and Technology at Shambat. The main objective was to evaluate three different...
types of seed (imported seed class E, first generation produced in Merowi Dam area and farmer’s seed) using seed potato tuber varieties (Bellini and Mondial) for growth and yield. The parameters measured in the experiment included emergence, growth estimation during growing season, yield and yield components, dry matter and examine the virus infection during season pressure (PLRV and PVY) percentage. Farmer seed and first generation seed were comparable in days to emergence and were faster than imported seed in both seasons. Numbers of stems were not significantly different between treatments in both seasons. For crop cover, all seed types were similar in season one, while farmer seed and first generation seed performed similarly and were highly better than imported seed in season two. The results showed significant yield differences. The highest yield was obtained by first generation seed type while the basic seed gave the lowest yield. The local types of seed tubers (first generation and farmer seed) gave similar yields and were both better than the imported seed in the second season. Two important viruses were identified as potato leaf roll virus (PLRV) and potato virus Y (PVY), depending on sero-diagnosis using Double Antibody Sandwich Elisa test (DAS Elisa test). The incidences of these viruses were in the range 7.14-28.57% for PLRV and 0.0%-35.7 for PVY. The locally multiplied farmer seed tubers showed the highest virus incidence compared to imported seed. First generation seed tuber recorded similar percentage and were better than farmer seed tubers. The lowest virus incidence was encountered by imported tubers.
النمو خلال الموسم، الإنتاجية ومكونات الإنتاجية، محتوى المواد الجافة ونسبة الإصابة الفيروسية بفيروس إلتفاف أوراق البطاطس و فيروس البطاطس Y خلال الموسم.

تقاوى المزارعين وتقاوي الجيل الأول مقارنتا في زمن الإنبات كانت أسرع عالم تقاوى المستورد في كل الموسمين. بالنسبة لعدد السباقات لم تكن هناك فروقات معنوية بين المعاملات في كل الموسمين. بالنسبة لتغطية النباتات، جميع الأنواع كانت متشابهة في الموسم الأول، بينما تقاوي المزارعين وتقاوي الجيل الأول المتماثلة وكانت أعلى بكثير من التقاوي المستوردة في الموسم الثاني. أظهرت النتائج فروقات معنوية للإنتاج. أعلى إنتاجية سجلها الجيل الأول، بينما تقاوي الأساس أعطت أقل إنتاجية.

التقاوي المحلية (الجيل الأول والمزارعين) أعطت نتائج متشابهة وكانت أعلى من تقاوي الأساس في الموسم الثاني.

سجلت أثرين من فيروسات البطاطس المهمة وهي فيروس إلتفاف أوراق البطاطس (PLRV) و فيروس البطاطس Y (PVY). أعتمادًا على اختبار إليزا بالاحتواء النائي للفيروس بالأجسام المضادة. حيث أظهرت نسبة رصد الإصابة في المدى: 28.57% PLRV و 35.7% PVY. تقاوي المزارعين أعطت أعلى نسبة إصابة فيروسية وسجلت فروقات معنوية مقارنة بالتقاوي المستوردة بينما تقاوي الجيل الأول سجلت نسب مضاربة وكانت أفضل من تقاوي المزارعين. أقل نسبة إصابة فيروسية عند تقاوي المستوردة.