

بسم الله الرحمن الرحيم

SudanUniversity of Science and Technology
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Evaluation of Performance of Different Potato Seed Types Grown in
Khartoum State

تقيم أداء أنواع مختلفة من تقاوي البطاطس المزروعة في ولاية
الخرطوم

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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
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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.

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تقيم أداء أنواع مختلفة من تقاوي البطاطس مزروعة في ولاية الخرطوم
ملخص البحث

أجريت تجربتين زراعتين خلال موسم شتوى 2009/2010 و 2010/2011 بالمزرعة التجريبية التابعة لكلية الدراسات الزراعية جامعة السودان للعلوم والتكنولوجيا بشمبات. بغرض تقييم ثلاث أنواع من تقاوي البطاطس (أساس مستوردة وجيل أول انتجت بمنطقة سد مروي وتقاوي مزاعين) باستخدام صنفى (بلىنى ومونديال) من حيث النمو والإنتاج. القياسات التى تم أخذها فى التجربة هى الإنبات فوق سطح التربة، تقيم

النمو خلال الموسم، الإنتاجية ومكونات الإنتاجية، محتوى المواد الجافة ونسبة الإصابة الفيروسية بفيروس إلتفاف أوراق البطاطس و فيروس البطاطس Y خلال الموسم. تقاوى المزارعين وتقاوى الجيل الأول مقارنة فى زمن الإنبات كانت اسرع من التقاوى المستوردة فى كلا الموسمين. بالنسبة لعدد السيقان لم تكن هنالك فروقات معنوية بين المعاملات فى كلا الموسمين. بالنسبة لتغطية النبات ، جميع الأنواع كانت متشابهة فى الموسم الأول، بينما تقاوى المزارعين وتقاوى الجيل الأول متماثلة وكانت أعلى بكثير من التقاوى المستوردة فى الموسم الثاني. أظهرت النتائج فروقات معنوية للإنتاج. أعلى إنتاجية سجلها الجيل الأول ، بينما تقاوى الأساس أعطت أقل إنتاجية. التقاوى المحلية (الجيل الأول و المزارعين) أعطت نتائج متشابهة وكانت أعلى من تقاوى الأساس فى الموسم الثاني. سجلت اثنين من فيروسات البطاطس المهمة وهى فيروس إلتفاف أوراق البطاطس (PLRV) وفيروس البطاطس (PVY) Y . اعتماداً على اختبار إيزا بالاحتواء الثنائي للفيروس بالأجسام المضادة. حيث اظهرت نسب رصد الإصابة فى المدى: 28.57%- 7.14% PLRV و 35.7%- 00% PVY . تقاوى المزارعين أعطت أعلى نسبة إصابة فيروسية وسجلت فروقات معنوية مقارنة بالتقاوى المستوردة، بينما تقاوى الجيل الأول سجلت نسب متقاربة وكانت أفضل من تقاوى المزارعين . أقل نسبة إصابة فيروسية رصدت بالتقاوى المستوردة.