

DEDICATION

,To the dear my father

,To my lovely mother

,To my brothers and sisters

,To my grand family aunts and uncles

To my friend Kothe Awow Anyag

.To my friends and colleagues

ACKNOWLEDGEMENT

First of all, I should direct great Thanks to **Allah** for giving me health, strength and patience to complete this work successfully.

My special thanks and gratitude to my supervisor **Dr. Atif Elsadig Idris** for his invaluable patient, Advice and guidance throughout the period of this research. I would like to express my gratitude to Ustaza/ Lyla Mohamed (ARC) for her help through my work in this research

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Onwar

ABSTRACT

A field experiment was carried out at the Experimental Farm, College of Agricultural Studies, Sudan university of Science and Technology, Shambat during the winter season of 2012/2013. The objectives of the research were to study the effect of compost and nitrogen fertilizers on growth and yield of two hybrids of sunflower under Irrigation . The experimental design was a Randomized Complete Block Design. The treatments were arranged in a split- plot arrangement with three replications. The treatments consisted of six levels of fertilizers: five levels of compost, (0 kg/fed, 5.04 kg/fed, 10.08kg/fed, 15.12kg/fed, 20.16kg/fed) and one level of nitrogen (0.25kgN/fed0.21) as sub plots and two sunflower hybrids (Hysun and Shambat) as main plots. The characters studied included plant height, number of leaves/plant, stem diameter, leaf area, days to 50% flowering , days to maturity, head diameter, number of seeds per head, weight of seeds/head, 100-seeds weight, empty seeds percentage, seed yield (ton/ha) and seed oil percentage.

The statistical analysis of variance revealed significant effect of fertilizer for disc diameter and seeds oil content, significant difference between hybrids for empty seeds percentage and significant effect for the interaction (a and b) for plant height at 45 days and days to maturity characters. No significant effect was observed for rest of the characters.

الخلاصة

أجريت هذه التجربة الحقلية بالمزرعة التجريبية في كلية الدراسات الزراعية، جامعة السودان للعلوم والتكنولوجيا - شمبات في الموسم الشتوي 2012/2013 بهدف دراسة مدى تأثير السماد العضوي المتحلل والنتروجين في نمو وإنتاجية هجينين من زهرة الشمس تحت ظروف الري. نفذت التجربة بتصميم القطاعات العشوائية الكاملة. تم تنظيم التجربة حسب نظام القطعة المنشقة بثلاثة مكررات واستخدمت ستة جرعات مختلفة من الأسمدة خمسة جرعات من السماد العضوي المتحلل 0 كيلوجرام/هكتار 5.04 كيلوجرام/هكتار 10.08 كيلوجرام/هكتار 15.12 كيلوجرام/هكتار 20.16 كيلوجرام/هكتار و سماد نيتروجيني 0.21 كيلوجرام هكتار قطع رئيسية وتم استخدام هجينين من زهرة الشمس (هاي صن 38 و شمبات) كقطع فرعية ثم درست معايير النمو الخضري والإنتاجية المتمثلة في طول النبات، عدد الأوراق في النبات، و قطر الساق، ومساحة الورقة، وعدد أيام الإزهار وعدد أيام

النضج و محيط القرص وعدد البذور في القرص و وزن البذور الممتلئة في القرص و وزن 100-بذرة، ونسبة البذور الفارغة وإنتاجية ونسبة الزيت في البذور. أظهرت نتائج التحليل الإحصائي وجود تأثير معنوي للتسميد العضوي والنتروجيني على قطر القرص ونسبة الزيت في البذور ووجود فروقات معنوية بين الهجينين في نسبة البذور الفارغة، و فروقات معنوية للتداخل بين المعاملتين، (السماد والهجينين) في طول النبات في عمر 45 يوم، وعدد أيام النضج. اظهر التحليل الإحصائي عدم وجود فروقات معنوية لباقي الصفات.

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