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DEDICATION

This work is dedicated to the soul of my father, whose spirit had influenced my study. My dedication further goes to my mother, my wife, my sons, my daughters and my sisters. Finally, my dedication also goes to all of those who search for knowledge.

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Abstract:

Field experiments were conducted on the Sugarcane Research Center Farm at Guneid during seasons 2015/2016 and 2016/2017 as plant cane crop. The soil was clayey vertisol with moderate chemical fertility. The objective of the study was to evaluate effect of source and rate of nitrogen and phosphorus fertilizers on the yield and quality of sugarcane. The experimental design was a randomized complete block design (RCBD) with seven treatments and four replications. The results showed significant differences between treatments at ($P \geq 0.05$) level for cane and sugar yield (tons/ha). The highest cane and sugar yield values; (160.9–164.1) and (17.3-15.9) were recorded from treatment (T2) which contained di-ammonium phosphate (DAP) and ammonium sulphate (AS) while the lowest cane and sugar yield (tons/ha) values; (131.9-139.1) and (13.5-13.5) were recorded from the control (T1) which was triple super phosphate (TSP) and urea in the two seasons, respectively. All treatments with di-ammonium phosphate (DAP) and Ammonium sulphate (AS) fertilizers recorded higher cane and sugar yield (ton/ha) than the control (T1) in the two seasons of the study.

موجز البحث:

أجريت تجربة حقلية بمزرعة مركز بحوث السكر بالجنيد خلال موسمي 2015-2016 و 2016-2017 في تربة طينية رسوبية متوسطة الخصوبة. الغرض من الدراسة تقييم تأثير الجرعات والمصادر المختلفة للأسمدة النيتروجينية والفوسفاتية علي إنتاجية ونوعية قصب السكر. تم تصميم التجربة علي نظام القطاعات العشوائية الكاملة بسبع معاملات وأربعة مكررات. النتائج أظهرت وجود فروقات معنوية بين المعاملات علي (مستوي معنوية 5%) في إنتاجية القصب والسكر حيث سجلت المعاملة تـ 2 والتي تحتوي علي سمادي الداب وسلفات الأمونيا علي أعلي إنتاجية في القصب والسكر (طن/هكتار) بينما حققت المعاملة تـ 1 (الشاهد) والتي تحتوي علي سمادي السيوبر فوسفيت واليوريا علي أدني إنتاجية للقصب والسكر خلال الموسمين. كل المعاملات التي تحتوي علي سمادي الداب وسلفات الأمونيا سجلت إنتاجية في القصب والسكر (طن/هكتار) أعلي من المعاملة تـ 1 (الشاهد) في موسمي الدراسة.