Dedication

This thesis is dedicated to my father and my mother, who taught me that the best kind of knowledge to have is the one learned for its own sake. They also taught me that even the largest task can be accomplished if it is done one step at a time.

I would like to dedicate the thesis to my sister SARA and my brother MOHAMED, without their encouragement, I would not have finished the degree.

For my family, who offered me unconditional love and support throughout the course of this thesis

To my Friends who always ready to lend a hand. And to everybody spend in love and encourage me…..

Salma

ACKNOWLEDGMENT

This work it would not be successful without the God who guides me in my everyday life and activates. I thank Him for the good health he has given me, and for the success of my study.

From the formative stages of this thesis, to the final draft, I owe an immense debt of gratitude to my supervisor, Dr. Sami

Ali, for supervision, advice, and guidance from the very early stage of this research as well as giving me extraordinary experiences throughout the work. Above all the needed support from the initial to the final level enabled me to develop an understanding of the subject.

Where would I be without my family? My parents deserve special mention for their inseparable support and prayers. My Father, in the first place, is the person who put the fundament for my learning character, showing me the joy of intellectual pursuit ever since I was a child. Words fail to express my appreciation, to my Mother, is the one who sincerely raised me with her caring and gentle love. Mohamed, and Sara, thanks for being supportive and caring sibling

I would like to thank department of Agronomy, Collage of Agricultural Studies at Shambat for showing me how to do my study. Many thanks to my friends for shaping up my ideas. I would like to thank them for assisting and helping me in my research

Lastly, I offer my regards and blessings to all of those who supported me in any respect and love during the duration of the project.

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ABSTRACT

To study the effect of compost, inoculums, and starter nitrogen on nodulation, growth, and yield of cluster bean, field experiment was conducted on the demonstration farm of the Collage of Agricultural Studies, Sudan University of Science and Technology at Shambat. The experiment was sown on Shambat loamy clay soil on July, 2009. A split plot design was

used with main plo(Compost) with and without . Four sub-plots namely control, inoculums, inoculum + half dose nitrogen, and inoculums + one dose nitrogen (dose = 43 kg N/ha in form of NPK (23:23:0). The treatment were replicated three times

The result showed no significant differences among the treatment in all parameter studies except for the relative growth rate. However, the differences were not sufficient enough to be reflected in the primary morphological yield components and eventually on the grain yield.

ملخص الاطروحة

أجريت التجربة لدراسة تأثير الكومبست (سماد عضوي مركب) والبكتريا العقدية وجرعة نتروجين بادئة علي تكوين العقد والنمو والإنتاجية في محصول القوار. أجريت التجربة الحقلية في المزرعة التجريبية في كلية الدراسات الزراعية- جامعة السودان للعلوم والتكنولوجيا . زرعت التجربة في شمبات ذات التربة الطينية الثقيلة في يوليو 2009 بترتيب القطع المنشقة واستعمال العامل الرئيسي السماد عضوي(مع السماد العضوي و بدون سماد عضوي)، والقطع الثانوية عبارة عن أربعة تتمثل في الشاهد ومعاملة بها سماد بكتيري + نصف جرعة من السماد النتروجيني وأخري بها سماد بكتيري + جرعة كاملة من النتروجين(الجرعة تحتوي علي 43كلجم/ نتروجين/ هكتار) باستعمال السماد الاعضوي NPK بنسبة 23: 23: صفر وكانت التجربة في ثلاث مكررات.

أظهرت النتائج عدم وجود فرو قات معنوية بين المعاملات في كل القراءات المدروسة

ماعدا معدل النمو، ولكن لم تكن بصورة كافية لكي تنعكس في مكونات الإنتاج الظاهرية

وخاصة في إنتاجية القرون.