

Sudan University Of Science and Technology
College of Graduate Studies

Economics of Spices Production in Dongola
Locality, Northern State, Sudan
A case study of Garlic Crop

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Dedication

To my Parents

To my Wife and Sons

for my Brothers and Sisters

To my Colleagues

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Abstract

This study was conducted in Dongla Locality of the Northern State in the season 2003/04.

The main objective of the study is to investigate the economics of garlic production, and the factors affecting its productivity in the area, through the investigation of the socio-economic characteristics of the farmers, estimation of the variable costs of production, determination of the main cost items, comparing the gross margins (net returns) and profitability of garlic with fennel and fenugreek and studying the main factors affecting garlic productivity.

The study depend on primary data, which was collected through a field survey from a multistage-stratified random sampling of 100 farmers, 66% of them from lower terraces Land, and 34% from upper terraces in season 2003/04.

Also secondary data were collected from other relevant sources. To achieve the objectives, general descriptive statistical analysis, crop budget analysis, coefficient of private profitability (CPP) and regression analysis were used.

The descriptive statistical analysis of socio-economic characteristics revealed that the farmers in the study area are homogenous. About 88% of the farmers within the active age range (20-59) years. The level of literacy was high (77%). Sixty two percent of the farmers had a large family size (more than 6 persons). Ninety two percent of the farmers irrigated their farms from the underground water. Twenty nine percent of the farmers are financed from banks (formal credit). The majority of the farmers (61%) having a small cropped area (0.5 feddan or less).

The study showed that the average yield for garlic was 83.7 Kantar/fed, the main garlic varieties grown in the area were local variety

and Chinese variety. The highest yield was obtained in lower terrace land, and Chinese variety gave more yield than local variety.

The cost analysis showed that the main cost items for garlic were seeds, land rent, weedings and irrigation cost. The cost of seeds comprised the highest share in the total variable cost. The gross margin results revealed that, garlic was profitable. In comparing garlic with fennel and fenugreek, according to their CPP, garlic ranked first followed by fennel and fenugreek.

Regression analysis revealed that seed rate, weedings and fertilizer amount were the most important factors that significantly affected garlic yield.

Regression analysis, also indicated a positive relationship between garlic yield and the number of irrigations, garlic variety and educational level.

For the improvement of the production, the study recommended solving of the production constraints specially seeds which are the main limiting factors of increasing yield. Applied research on practical problems, improvement of extension services and credit availability are also essential.

بسم الله الرحمن الرحيم

خلاصة الأطروحة

أجريت هذه الدراسة في محلية دنقلا في الولاية الشمالية في موسم 2003 / 04 م .

هدف الدراسة الأساسي هو التعرف على اقتصاديات إنتاج محصول الثوم والعوامل التي تؤثر في إنتاجيته ، وذلك من خلال دراسة الخصائص الاجتماعية للمزارعين ، تقدير تكاليف الإنتاج وتحديد أهم بنود التكلفة ، ومقارنة العائد والربحية لمحصول الثوم مع عائد وربحية محصول الشمار والحلبة ودراسة أهم العوامل التي تؤثر في إنتاجية الثوم .

اعتمدت الدراسة على معلومات أولية جمعت من عينة طبقية عشوائية متعددة المراحل من 100 مزارع ، 66% منهم من أراضي التروس الدنيا و 34% من أراضي التروس العليا في موسم 2003/04 م ، وقد دعمت هذه المعلومات الأولية بمعلومات ثانوية من مصادر أخرى ذات صلة .

أخضعت هذه المعلومات للتحليل الإحصائي الوصفي ، الميزانية المزرعية ، معامل الربحية الخاص (CPP) والتحليل الارتدادي .

أوضحت التحاليل الإحصائية الوصفية للخصائص الاجتماعية والاقتصادية أن مزارعي المنطقة متجانسون ، وأن 88% منهم يقعون ضمن فئة الأعمار النشطة ، مستوى التعليم مرتفع (77%) ، معظم حجم الأسرة (62%) أكثر من 6 أشخاص ، كذلك أوضحت التحاليل الوصفية أن 92% من المزارعين يستخدمون المياه الجوفية في الري ، 29% من المزارعين يعتمدون على التمويل البنكي (النظامي) وأن المساحة المزروعة بمحصول الثوم لـ 61% من المزارعين 0.5 فدان وأقل .

أوضحت الدراسة أن متوسط إنتاجية الفدان لمحصول الثوم تبلغ 83.7 قنطار . أهم الأصناف التي تزرع في منطقة الدراسة هما الصنف البلدي والصنف الصيني ، الإنتاجية العالية للمحصول وجدت في أراضي التروس الدنيا وأن إنتاجية الصنف الصيني أعلى من إنتاجية الصنف البلدي (المحلي) .

أظهر تحليل التكلفة أن تكلفة التقاوي ، إيجار الأراضي ، الحشائش والري أهم بنود التكلفة وأن تكلفة التقاوي سجلت أعلى نسبة من جملة التكاليف الكلية .
أوضحت نتيجة تحليل العائدات بأن محصول الثوم مريح وعند مقارنة محصول الثوم مع محصول الشمار والحلبة وطبقاً لمعامل الربحية الخاص (CPP) سجل محصول الثوم أعلى ربحية تلاه محصول الشمار ثم محصول الحلبة .
أظهرت نتائج التحليل الارتدادي أن كمية التقاوي ، كمية مبيدات الحشائش وكمية السماد تمثل أهم العناصر ذات الأثر المعنوي الذي يمثل معظم الاختلاف في الإنتاجية بالنسبة لمحصول الثوم كذلك يشير التحليل الارتدادي إلى وجود علاقة موجبة بين إنتاجية محصول الثوم وكل من عدد الريات ، الصنف ومستوى التعليم .
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