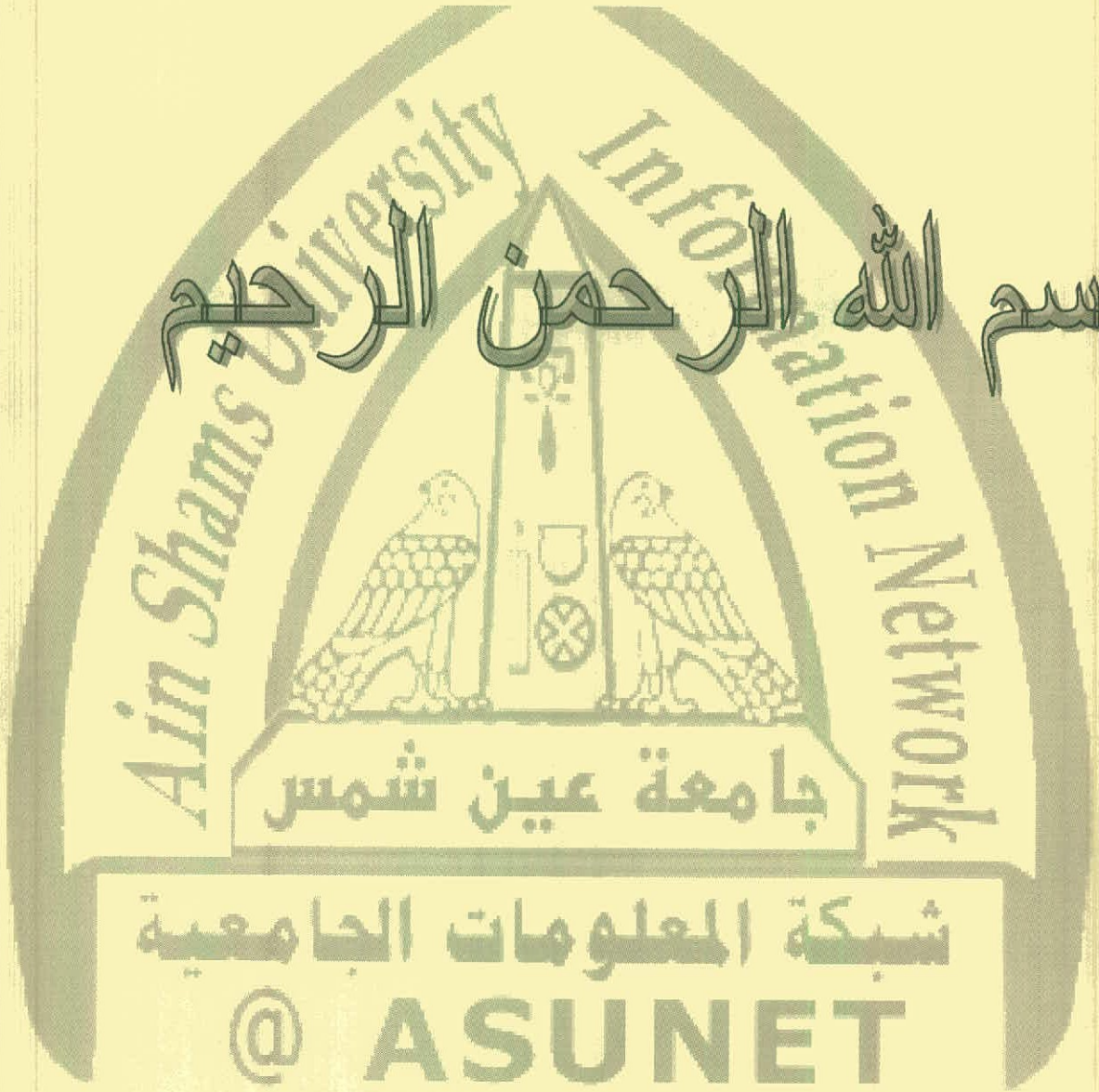
شبكة المعلومات الجامعية



بسم الله الرحمن الرحيم

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد أعدت دون أية تغيرات

يجب أن

تحفظ هذه الأفلام بعيدا عن الغبار

في درجة حرارة من ١٥-٢٥ مئوية ورطوبة نسبية من ٢٠-٤٠%

To be Kept away from Dust in Dry Cool place of 15-25- c and relative humidity 20-40%

Ain Shams University Information Network
شبكة المعلومات الجامعية
ASUNET

بعض الوثائـــــــق الاصليـــــة تالفـــة

Ain Shams University Information Network
جامعة عين شمس
شبكة المعلومات الجامعية
@ ASUNET

بالرسالة صفحات لم ترد بالاصل

Book

Biochemical Studies on the Effect of Insecticides and herbicides on sugar beet

By

Safaa Salem Mohamed El- sayed

B .Sc . Agric . (Biochemistry) Ain shams Univ. (1983)

M. Sc. Agric . (Biochemistry) Cairo Univ. (1993)

Thesis

Submitted in Partial Fulfilment of

The Requirement for the Degree

Of

Doctor of philosophy

In

Agricultural Biochemistry

Department of Biochemistry

Faculty of Agriculture

Cairo University

2002

Biochemical studies on the effect of insecticides and herbicides on Sugar beet.

By

Safaa Salem Mohamed El-Sayed

Supervising Committee :

1-Prof . Dr. **Hassan Mohamed Salem**
prof, of Biochemistry – Department , of Biochemistry
Faculty of Agriculture – Cairo University.

2-Prof. Dr. **Ibrahim Hanafy Mahmoud El-Geddawy**
Deputy of Sugar Crops Research Institute (SCRI)
Agriculture Research Center

Approval Sheet

Name : Safaa Salem Mohamed El-Sayed

B. Sc . Agric (Biochemistry) . Ain Shams Univ .(1983)

M. Sc. Agric (Biochemistry) . Cairo Univ. (1993)

Title of Thesis : Biochemical studies on the effect of insecticides and herbicides on sugar beet .

Thesis Approved by :

Prof . Dr. .....M. E. Ramadan.....

Prof . Dr. .....

Prof . Dr. .....

Committee in cherge

Date : 1 / 6 / 2002

Acknowledgement

The author would like to express her deepest gratitude and sincere appreciation to **prof. Dr. Hassan Salem** . prof . of Biochemistry, Department of Biochemistry Faculty of Agriculture Cairo University for his kind advice and sincere help throughout the course of this investigation and his constructive criticism during the preparation of this work .

Thanks also to **prof .Dr. Ibrahim El – Geddawy** Deputy of Sugar Crops Research Institute (SCRI) for his suggesting the problem and valuable guidance and help throughout this investigation .

Thanks also to all the staff member of (SCRI) in Giza and kafre EL sheikh for their help and encouragement during the study .

Deep thanks to my mother , brother and my sisters .

As last but not least , I would like to appreciate my husband and Kids for their patience and kinc encouragement throughout the period of the present study and forever .

Contents

Name of Candidate : Safaa Salem Mohamed El-Sayed Degree : Ph.D

Title of Thesis : Biochemical studies on the effect of insecticides and herbicides on sugar beet .

Supervisors : 1- Hassan Mohamec Salem
2- Ibrahim Hanafy Mahmoud EL- Geddawy

Department : Biochemistry
Branch :

Approval : prof. Dr. Mohamed EL- Sayed Ramadan
Prof. Dr. Hassan Mohamed Salem
Prof. Dr. Abd . EL-Kader Morsy EL- Sayed

Abstract

A field experiment was carried out in Sakha research station (Kafre. EL- Shiekh Governorate) during the growing season of (1999-2000) in order to study the relative effect of some insecticides (Lannate , Actellic) and herbicides (Goltix, Fusilade) on growth criteria , biochemical constituents , yield and its attributes of sugar beet plant . Each of the insecticides and herbicides were used by the recommended dose , Goltix (2Kg /fed.) Fusilade (1½ L/fed.) , Lannate (300 g/fed.) and Actellic (1½ L/fed.). The results could be summarized as the following :

- The results showed that treatment of (Goltix+Fusilade) attained the highest values of chlorophyll (b) and reducing sugar percentage of sugar beet leaves (LRS%) and invertase activity in sugar beet roots at the two growth stages.
- The interaction between the insecticide Actellic and treatment of herbicides (Goltix and Fusilade) gave the highest values of chlorophyll (a) by 10.87 and 6.59 mg /g. fresh weight at (120, 210) from planting, invertase enzyme activity by 3.37 mg glucose /30 min / gm.f.w of sugar beet leaves at 120 days and sucrose percentage by 15.02% and 17.95% of sugar beet roots at 120 , 210 days respectively .
- Neither insecticide nor herb cide treatments gave a significant influence on the values of top and roots yield .
- The obtained results showed that the highest juice purity (82.5%) and sugar yield (6.11 ton / fed) were produced when the sugar beet plant treated by the interaction between Lannate insecticide and the herbicides (Goltix + Fusilade) at harvest.

Introduction

INTRODUCTION

Sugar cane and sugar beet are considered the unique source for sugar production in the world . Approximately, 60% of the total production of sugar are produced from sugar cane and 40 % are mostly produced form sugar beet.

In Egypt, the disproportional between production and consumption of sugar created a big gap . This gap between sugar production (1425.000 tons) and total domestic consumption (1800. 000 tons) amounted to 375. 000 tons*. The above mentioned gap may be due to the continuous increase of population and / or to the increase of per capita consumption. Because of the area of sugar cane became limited and there is no chance to expand the cultivated area of sugar cane horizontally , the policy maker tended to introduce new sugar crops to decrease the gap between production and consumption .

Sugar beet has been introduced as a new sugar crops in Egypt for use as a second source for production after sugar cane.

As a matter of fact, application of insecticides in sugar beet field is considered one of the important applications especially for the early sowing dates could be affecting the yield and quality.

On the other hand, using a lot amount of herbicides are needed to control the wide spread of weeds . So, under these conditions, the additional doses of herbicides may be produces a side effect on plant metabolism.

This work was conducted to study the relative effect of the studied insecticides and herbicides on the quantitative and qualitative parameters of sugar beet.

---

* C.A . The annual report of Sugar Crops Council 2000

Review Of Literature