بسم الله الرحمن الرحيم

شبكة المعلومـــــات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

﴿ قـــسـم ﴾

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد اعدت دون آية تغيرات

يجب أن

تحفظ هذه الأفلام بعيداً عن الغبار

في درجة حرارة من 15 – 20 مئوية ورطوبة نسبية من 20-40 %

To be kept away from dust in dry cool place of
15 – 25c and relative humidity 20-40 %

بعض الوثائق الأصلية تالفة

بالرسالة صفحات

لم ترد بالأصـــل

EFFECT OF SOME MUTAGENIC AGENTS ON TRITICALE IMPROVEMENT

BY

NAGLAA KAMEL ABD EL-HALEM
B. Sc. Agric., (Agronomy), Ain Shams Univ., 1994.

A thesis submitted in partial fulfillment

of

the requirement for the degree of

MASTER OF SCIENCE

in

Agricultural Science

(Agronomy)

Department of Agronomy
Faculty of Agriculture
Ain Shams University

2001

APPROVAL SHEET

EFFECT OF SOME MUTAGENIC AGENTS ON TRITICALE IMPROVEMENT

BY

NAGLAA KAMEL ABD EL-HALEM

B. Sc. Agric., (Agronomy), Ain Shams Univ. 1994

This thesis for M. Sc. Degree has been approved by:

Prof. Dr. M. S. Sultan ..M.S.Sultan.....

Prof. of Agron., Dept. of Agron., Fac. of Agric., El-Mansoura Univ

Prof. Dr. A. M. Esmail ..Ali Esmail.....

Prof. of Agron., Dept. of Agron., Fac. of Agric., Ain Shams Univ

Prof. Dr. K.A. El-Shouny (Supervisor) .....

Prof. of Agron., Dept. of Agron., Fac. of Agric., Ain Shams Univ.

Date of examination 21 / 10/2000 .

EFFECT OF SOME MUTAGENIC AGENTS ON TRITICALE IMPROVEMENT

BY

NAGLAA KAMEL ABD EL-HALEM

B. Sc. Agric., (Agronomy), Ain Shams Univ. 1994

Under the supervision of:

PROF. DR. KAMAL ABD EL-AZIZ EL-SHOUNY

Prof. of Agron., Fac. of Agric., Ain Shams Univ.

DR. RAMADAN KAMEL HASSAN

Assoc. Prof. of Agron., Fac. of Agric., Ain Shams Univ.

DR. KAMAL IMAM MOHAMED IBRAHIM

Assoc. Prof. of Agron., Fac. of Agric., Ain Shams Univ.

ABSTRACT

Naglaa Kamel. Effect of some mutagenic agents on triticale improvement. Unpublished Master of science thesis, Agronomy Department, Fac. of Agric., Ain Shams University, 2001.

The present investigation was carried out at the Experimental Farms of Faculty of Agriculture, Ain Shams Univ. at both Shoubra El- Kheima in the first season (1995/1996) and Shalakan, Kalubia Governorate in the second and third growing seasons (1996 / 97 and 1997 / 98) to study the effect of treatments with gamma rays and ethyleneimine [EI] on the performance of two triticale lines in the first mutagenic generation as well as to study genetic variability and mutation process in the second and the third mutagenic generations.

Five treatments of gamma rays (0.0, 10, 20, 30 and 40 kr) and six treatments of EI (0.0, 0.08, 0.10, 0.15, 0.20 and 0.25%) were used. Results of the M_1 generation showed that significant differences between the two studied lines in respect to plant height and spike length. Significant and wide difference was noticed between the control and the mutagenic treatments in which the low doses of γ -rays seemed to have a stimulating effect on plant height at 10 kr and number of grains per spike at 10 and 20 kr while the higher doses of 30 and 40 kr caused significant reduction for number of grains per spike. The first four concentrations of EI, viz. 0.08, 0.10,

0.15 and 0.20% had stimulating effect on number of grains per spike.

Results of M_2 generation indicated that there was a linear relationship between the dosage of gamma – rays or EI and mutation rate, at the same time gamma rays treatments gave the highest percentages of chlorophyll and morphological mutations. There was a clear effect for the different mutagenic treatments on spectrum of chlorophyll and morphological mutations depending on the mutagenic treatment and genetic material.

Results obtained in M_3 generation showed the same trend in M_2 for the percentages of mutated families. Therefore, the variance of most studied characters of some selected mutant types was higher than that of the parental lines.

Key words: Triticale, Gamma rays, Ethyleneimine, Irradation, Chlorophyll mutations, Morphological mutations, Yield and its attributes.

ACKNOWLEDGEMENT

The author wishes to express her great appreciation and gratitude to Dr. K.A. El-Shouny, professor of plant breeding, Agronomy Department, Faculty of Agriculture, Ain Shams University, Dr. R.K. Hassan and Dr. K. I. M. Ibrahim, Assistant professors of plant Breeding at the same department, for suggesting the problem, drawing the plan of the work, valuable help and their continuous supervision during the progress of the study and the preparation of the manuscript.

Also, I want to express my gratitude to all the staff members and my fellow colleagues of department of Agronomy, Faculty of Agriculture.