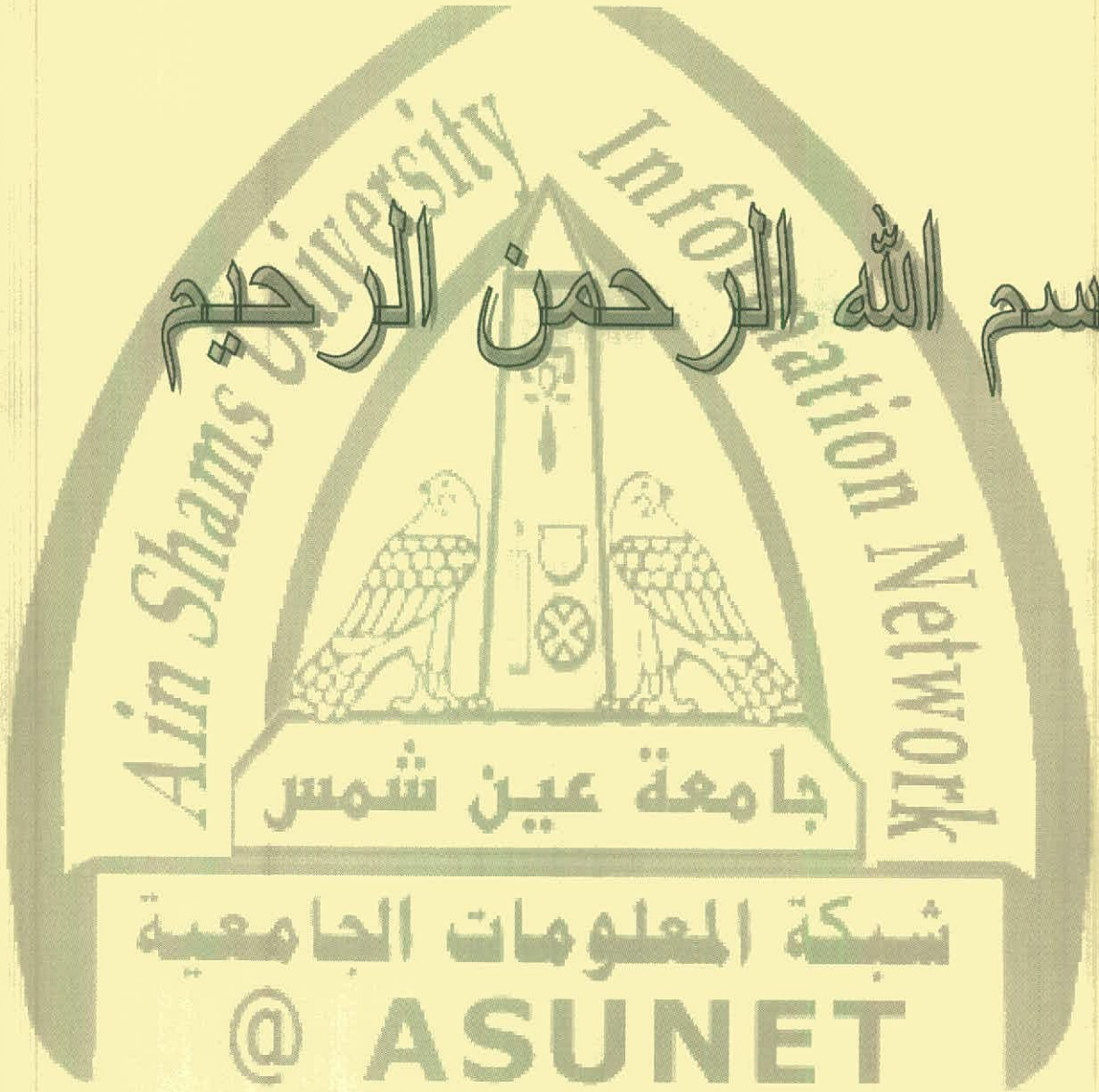
شبكة المعلومات الجامعية



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%

بعض الوثائـــــــق الاصليـــــة تالفـــة

بالرسالة صفحات لم ترد بالاصل

Sugar beet *(Beta vulgaris, L.)* seed production and its viability in Egypt

By

Ahmad El-Sayed Atia

B.Sc. Agric. (Agronomy), Ain Shams Univ., 1993

A thesis submitted in partial fulfillment

of the requirements for the degree

of

MASTER OF SCIENCE

in

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(Agronomy)

Department of Agronomy

Faculty of Agriculture

Ain Shams University

2000

APPROVAL SHEET

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Date of examination / /2000.

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ABSTRACT

Ahmad El-Sayed Atia, Sugar beet *(Beta vulgaris, L.)* seed production and its viability in Egypt. Unpublished Master of Science Thesis, Agronomy Department, Fac. of Agric., Ain Shams Univ., 2000.

The present investigation was carried out in faculty of Agriculture experimental farm, Ain Shams University, Shoubra El-Khaima–Kaliobia Governorate during the period from 1997 to 1999 to study the effect of vernalization, gibberellic acid (GA3) and root weight on sugar beet flower induction and seed setting under Egyptian conditions and to evaluate the produced seeds as compared with its mother variety H-Poly1. The obtained results showed that only roots which exposed to low temperature (vernalization) successfully produced seeds in both experimental seasons while unvernalized roots failed to produce flower. Both flowering and seed setting percentages were increased with prolonging photo-period in both seasons up to 18h/d. Big vernalized stickling weight (>1000 g) exposed to the longest selected photo-period (18h/d) gave the highest values of flowering plants percentage (86.3% and 91.7%) and total seed yield (260.8 kg /fed and 289.36 kg/fed)) in both seasons respectively, and seed setting (100%) in the second season only. Spraying sugar beet plants with 1000 ppm GA_3 gave the lowest mean no. of days from replanting to flowering (47.77 and 44.08 days), the highest flowering plants percentage (29.18% and 29.70%) and seed setting percentage (28.02% and 29.47%) in both experimental seasons, respectively. The highest seed setting percentage was obtained from vernalized roots of more than 1000g and received 1000ppm GA_3 in both seasons (64.7 and 62.2%, resp.).The produced seeds were collected from each treatment and were subjected to an evaluation study. Results showed that the highest germination percentage (87.50%) was obtained from seed produced on vernalized roots of 500-1000g and exposed to 14h/d photoperiod as compared by mother variety seed.

Concerning 100 seed weight non of the treatments studied exceeded mother variety seeds which gave 100 seed weight of 3.4 g. The highest root yield (24.5 t/fed) was obtained from seeds produced from vernalized roots of less than 500 g and exposed to 14 h/d photoperiod as compared by mother variety root yield which was 20.9 t/fed. Non of the treatments exceeded mother variety sucrose percentage (16.5). Control treatment (0 ppm)GA3 failed to produce any viable seeds while the other two GA_3 application treatments gave viable seeds and had significant effects on all seed evaluation characters. The highest value of germination percentage (71.5%) was obtained when vernalized roots of more than 1000g and exposed to 1000 ppm GA_3 application were planted.

KEY WORDS:

Sugar beet, vernalization, photoperiod, GA3, flowering, seed setting, seed production and germination.

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