



شبكة المعلومات الجامعية

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شبكة المعلومات الجامعية  
التوثيق الالكتروني والميكروفيلم



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# جامعة عين شمس

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## قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها  
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GENETIC STUDIES ON SOME AGRONOMIC AND QUALITY CHARACTERS IN PEA (*PISUM SATIVUM L.*)

By Mohamed Taha Mansour EL-Hefnawy

B.Sc. (Agric. Zagazig University, 1973) M.Sc. (Genetics, Zagazig University, 2002)

THESIS

Submitted in partial Fulfilment of the requirements for the Degree of DOCTOR OF PHILOSOPHY

IN Agriculture, Suez Canal Agricultural Science (Agricultural Botany)

Department of Agricultural Botany Faculty of Agriculture Suez Canal University



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**GENETIC STUDIES ON SOME AGRONOMIC  
AND QUALITY CHARACTERS  
IN PEA ( PISUM SATIVUM L.)**

By

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*B.Sc. ( Agric. Zagazig University, 1973 )*  
*M.Sc.( Genetics, Zagazig University ,2002 )*

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Date of examination : 5 / 1 / 2006

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## ABSTRACT

The mutagenic treatments in this study i.e. gamma rays and sodium azide were detected to facilitate and release the covariation that need plenty of crosses and time in traditional breeding.

The genetic variations obtained from master B and Lincoln cultivar, under such physical and chemical mutagens were evaluated for and useful characters

Results showed that the selected M<sub>2</sub> pea plants confirmed in M<sub>3</sub> generation. Additive gene action was important in controlling the selected characters through . The intergeneration coefficient of M<sub>2</sub> / M<sub>3</sub> was near unity indicating the extent of similarity of the selected characters through M<sub>3</sub> generation.

The electrophoresis of M<sub>3</sub> was characterized by increasing band number and intensity as compared with their respective parents this explains that the selected mutations have gone through completely similar pathes during evolutionary processes. Four mutations were recorded having high yielding potential and contain more amino acids and protein as compared with their respective parents. It could be concluded that such four mutants must be released in common agriculture in Egypt.

Keywords: mutations, additive , M<sub>2</sub> and M<sub>3</sub> , Electrophoresis , variations , intergeneration , mutagen.

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PHYSICS DEPARTMENT

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*First and foremost, all praise be to **Allah (Al-Waged)**, The beneficent, The Merciful, without whose mercy and guidance this work would never had been started nor completed. I praise Him (**Al-Waged**) as much as the heavens and earth and what are in between or behind.*

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