بسم الله الرحمن الرحيم

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بقسم التوثيق الإلكتروني بمركز الشبكات وتكنولوجيا المعلومات دون أدنى مسئولية عن محتوى هذه الرسالة.

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MORPHOLOGICAL AND CHEMICAL IDENTIFICATION OF NEW VARIETIES OF SOME FIELD CROPS

By

NEMAT ADLY NAGUIB

B. Sc. Agric. (Agronomy), Ain Shame Univ., 1978

M.Sc. (Agronomy), Cairo Univ., 1991

A thesis submitted in partial fulfillment

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ABSTRACT

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Nemat Adly Naguib. Morphological and chemical identification of new varieties of some field crops. Unpublished Ph.D. Dissertation, University of Ain Shams, Faculty of Agriculture, Department of Agronomy, 2000.

This study was carried out with the objectives of determining the actual differences between various crop genotypes under test at different stages of growth. The necessity for such information was to assist identifying these genotypes in the quality control and certification tests. Seven faba bean (*Vicia faba L.)* genotypes (Giza 461, Giza 402, Giza 716, Giza Blanka, Line 40/93, Triple white and Bakestani), three peanut (*Arachis hypogaea L.)* genotypes (Giza 4, Giza 5 and Hybrid 8), four sesame (*Sesamum indicum L.*) genotypes (Giza 32, Hybrid 55, Hybrid 102 and New arrival 256), two onion (*Allium cepa L.*) genotypes Giza 6 Mohassan and Giza 20 were selected to test for possible varieties identification. Certain selected quantitative and qualitative characters were studied. The various crop genotypes involved in this study were selected because some of them are already registered and their seeds are marketable, the other genotypes are promising and their registration in process. Certain quantitative and qualitative morphological characters were investigated on seed, seedling and adult plants. The results revealed great differences in certain morphological characters between various genotypes and could be used to assist in the quality control and seed testing. In addition, chemical composition including crude protein, total carbohydrates, crude oil and fatty acids were tested in seeds. Moreover, the patterns of seed protein were studied by using SDS–PAGE. It was found that each genotype was characterized by proteins with specific molecular weight. Therefore, electrophoretic analysis is an important tool for the identification of cultivars.

Key words:

Faba bean, Peanut, Sesame, Onion, Identification, Quantitative characters, Qualitative characters, Electrophoresis,

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