

ABSTRACT

This study was carried out with the objectives of determining the actual morphological and biochemical differences between various wheat varieties under test at different stages of growth. The necessity for such information was to assist the identification of these varieties in the quality control and certification tests. Twelve important varieties namely Giza 164 , Giza 165 , Giza 168 , Sakha 61, Sakha 69 , Sakha 93, Gemmiza 3, Gemmiza 5 ,Gemmiza 7, Sids 1, Sids 4 and Sids 6 were selected for this study. These genotypes were selected because some of them are already registered and their seeds are released marketable, the other genotypes are promising and they are undergoin registration process. Certain quantitative and qualitative morphological characters were investigated on seed, seedling and adult plants using the guidelines for distinctness, homogeneity and stability published by the international Union for the Protection Of new Varieties of plants (UPOV), the International Board of Plant Genetic Resources (IBPGR). The results revealed great differences in certain morphological characters between various varieties that could be used to assist in the quality control and seed tests. In addition, some chemical composition compounds such as crude protein, total carbohydrates, moisture content and ash content were tested in seeds.

Moreover, the patterns of seed protein were studied by using SDS-PAGE method. It was found that each genotype was characterized by proteins with specific molecular weight. The bands of two isozyme systems (esterase and peroxidase) were fractionated for the identification and characterization of wheat varieties based on polyacrylamide gel electrophoresis. General speaking, the number of bands and the R_f value of

the bands of the isozymes under study can be adequately employed to characterize various wheat varieties.

Key words: Wheat, Identification, Quantitative characters, Qualitative characters, Electrophoresis.

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