INTRODUCTION

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Maize is one of the most important strategic food cereals. It is grown as a commercial crop in over 25 countries worldwide. It is widely used in bread making. Also, it conforms the basis for several industries such as starch, fructose and corn oil, meanwhile it is a main component (about 70%) of animal feed. Recently, the Egyptian government policy to mix wheat flour (80%) with corn flour (20%) in bread making all over the country in order to reduce wheat imports and to achieve wheat sufficiency[1]. Half of the production consists of white maize, for human food consumption In Egypt, where there is about 1.659 million feddans producing about 5.68 million tons of maize kernels with an average yield of 24.78 ardab/ feddan[2]. Such production represent about 1.0 % of the total maize grain production in the world[3].

There are a number of inbred lines of maize, representing the majority of the parental material involved in the major white single and three-way crosses which cover most the cultivated area of maize. The internationally recognized descriptor of The International Union for the Protection of New Varieties **UPOV (1994)** was followed precisely to differentiate between the tested inbred lines according to their morphological specifications and characteristics in different growth stages as recommended by **Tottman (1987).**

1.National Maize Research Programme, 2001

2.Central Administration of Economic, Ministry of Agriculture, Egypt, 2003.

3.Corn Refiners Association, Inc. Washington Dc at website www.corn.org USA, 2

Much varietal identification is carried out depending on the morphological characteristics. Most of the current procedures for testing, distinctness, uniformity and stability (DUS) are being to establish descriptions and necessary information on field inspection. This is one of the essential requirements for securing plant breeders right (PBR) and for national listing registration as well.

Successful stand establishment requires high-quality, genetically pure seed that produces rapid uniform seedling emergence. To ensure a plentiful supply of quality seeds, seed industry routinely uses an array of seed quality tests ranging from genetic purity to seed vigour analyses. For further improving the sensitivity of these tests, seed scientists actively engaged in developing new seed quality tests and refining the existing ones. This approach becomes more important as for new molecular biology advances are incorporated into seed production, devoting even greater emphasis on seed quality assessment.

One of the recent advances in genetic purity testing is the Polymerase Chain Reaction (PCR) technique, which is known by random amplification of polymorphic DNA or RAPD. This technique uses a single arbitrarily chosen oligonucleotide primer that hybridizes to the genomic DNA template of individual seeds at two different sites, one on each strand of the complementary DNA under appropriate temperature alternations; a thermostable DNA polymerase synthesizes discrete DNA products (usually 200-2000 base pairs long). Each primer can consistently amplify several unique DNA fragments that can be separated on an

electrophoretic gel. Some of these fragments arecharacteristic of a genotype and be useful in genetic purity tests.

The objective of this study is

1- Identifying the actual description of some released maize genotypes.

2- Determine the distinguishable characteristics of each genotypes .

3- Granting and securing plant breeders right (PBR).