



**FACULTY OF AGRICULTURAL SCIENCES
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Introduction to Plant Breeding Definition of Plant Breeding

Plant breeding is an applied branch of Botany, which deals with improvement of agricultural crops. This branch of agricultural science has contributed maximum to the increase in food production all over the world and therefore, now a day it assuming ever increasing importance in field of agriculture in every country. Riley, 1978 defined plant breeding as a technology of developing superior crop plants/ varieties for various purpose. Frankel, 1958 defined plant breeding as the genetic adjustment of plants to the service man. Plant breeding is a branch of biology concerned with changing the genotype of plant so that they become more useful. The food grain production of India has increased from 54 millions tonnes to 206 million tonns. As a result of this the nation has become almost self sufficient in food grain, this thing is achieved only due to green revolution has tookes place in 1965-66. Green revolution in our country particularly in Rice and Wheat increases our food grain production in our country particularly in Rice and Wheat increases our food grain production and today we are exporting several million tonns food grain to many developed and developing country. On the other hand population of our country after independence also increasing at an arming rate of 2.5% per year, this make it necessity that the food grains production should increases at least at the same rate or faster than the population rate. Therefore, it is the necessity of modern farmers. Progressive farmers to apply plant breeding science, techniques for the development of new high yielding varieties, to meet the need of this tremendous growing population. In India more than 70% population is depend on agriculture, however majority of them are marginal farmers and landless labour. The input like fertilizer, pesticides, insecticides required for agriculture are expensive and therefore farmers are looking forward for improved high yielding, disease and pest resistance and Earliness varieties. Govt of India also trying to made every effort after independence for increasing agricultural production.

Nature of Plant Breeding Plant breeding is an art or science and is as old as agriculture, started since man learnt to cultivate the plants. In earlier days, man depends on his skill and judgement in selecting better plants. His knowledge about the plant was very limited. He knew nothing about the inheritance of characters, role of environment in producing them and the basis of variation in various plant characters. His method of selection was designed without the understanding of the principle of inheritance. Therefore during primitive time plant breeding was

largely an art and very less science was involved in that, but the present breeding methods are entirely based on the scientific principles of plant sciences, particularly of genetics and cytogenetics. Thus, plant breeding is purely science with very little art involved. Science is the knowledge gathered through scientific method. The scientific method consists of observation, formulation of hypothesis, experimentation and conclusion either to accept or reject the hypothesis. Plant breeding is considered as the current phase of crop evolution. As the knowledge of genetics and other related science progresses plant breeding becomes less art and more science. Especially the discovery of Mendel's work in 1900, added a lot to the knowledge of science. Selection of desirable plants even today is an art; it depends on the skill of a person but alone skill is not enough, modern plant breeding is based on thorough understanding and use of genetics principles. To be successful, a plant breeder must know each and everything about the crop with which he is working. He should have an understanding of principles of different disciplines viz. genetics, cytology, Morphology and Taxonomy, plant Physiology, Plant Pathology, Entomology, Agronomy, and Soil Science, Biochemistry, Statistics, and Biometrics. Computer and Plant biotechnology. Thus plant breeding is an art science and a technology of developing genetically superior plants in terms of the economic utility for the mankind.