



BACKGROUND

PLANT BREEDING'S ROLE

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At the beginning of 2001, our planet had six billion inhabitants. According to United Nations projections, that number will grow to eight billion in 2020 and 10 billion by 2035.

In order to avoid famine, this population increase will have to be accompanied by an increase in agricultural production. However, the world's arable land base has probably been stretched to the maximum, if farmers are to avoid placing crops in fragile zones where productivity is low. Additionally, land area available for agriculture will actually decrease in many regions because of urbanization and industrialization. The only solution, therefore, will be to increase production per unit of land area.

This can only be accomplished through the continued efforts of plant breeders. Through their development of varieties that mature faster, are more resistant to pest and disease outbreaks, and produce higher yields, breeders help make the most of the world's cultivated land to feed the greatest number of people. **In fact, the utilization of improved plant varieties is recognized as having been responsible for 50 per cent of the increase in productivity of the major agricultural crops during the last 30 years.**

The art of plant breeding has been around much longer than that however. For thousands of years, first by domestication, and then simply by selecting the best plants in their fields to provide seed for their next crop, farmers have adapted plants to their needs and have progressively improved them. And since the turn of the 20th century, new scientific and technical developments have permitted a much greater rate of improvement and efficiency in plants.

There are currently several hundred public organizations and private enterprises whose mission is plant improvement, and their annual research budget is estimated to be around \$1 billion. Plant improvement may be the most important industry we have today – one which provides the biological basis for world food security, and supports the livelihoods of every person on Earth (FAO 1996, *Global Plan of Action for the Conservation and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture*).