

# Molecular World of the Plants and Agriculture

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## Abstract

As the population is rising, the demand of food supply has also increased significantly. However agriculture and agricultural productions have to face many different challenges. Expected amount and qualified food production needs the solutions for these. In this context, molecular science presents the most efficient, cost-effective tools and environmentally friendly strategy for improvements of the agriculture and controlling the food production.

**Keywords** Agricultural Production; Molecular Breeding Genetics

## Introduction

Plants are amazing transformers which produce biomolecules of life and energy only from sunlight, water and CO<sub>2</sub>. Humans completely depend on the plants because of foods and also their many other type requirements including medicines, clothes, accommodation goods, papers, industrial raw materials and many tools. Agricultural revolution began approximately 12000 years ago and it is considered a milestone of the human settlement due to rescue the people from temporarily and continuously hunger by breeding of the plants and domestication of the animals. In the other words, it is basis of the present human civilization.

Since then, nonstop efforts for improvement of the agricultural production have been going on. Particularly in last century, loss of the productive farmland caused by human activities makes agricultural scientists became compulsory to find new ways for providing much yield per unit area. In the 1980s and early 2000s, great development of molecular genetics, elucidation of many molecular mechanisms and produced huge data accelerate these efforts. At the present time, molecular breeding substantially replace conventional breeding based on the observations and it produce satisfying results and bring up new methods with fast and more targeted and less requirements.

Recombinant DNA technology which enabled researchers to

architecture of the many agricultural traits and genetic variations [10].