

## GM CROPS: THEIR BENEFITS AND DRAWBACKS

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### ABSTRACT

In recent years, genetically modified (GM) crops are used in agriculture through modern biotechnology. GM crops are classified into different varieties, *viz.*, (i) genetically modified herbicide tolerant (GMHT), having resistant capability against herbicides, (ii) genetically modified insect resistant (GMIR) crops, (iii) genetically modified virus resistant (GMVR), *etc.* But there is a big debate among scientists about the merits and demerits of GM crops. Apart from many benefits, GM crops have some bad effects on environment and non-target organisms, such as insects, natural enemies, *etc.* as they are thought to be promoting resistance in targeted organism.

**Key words:** *GM crop, Resistant, Natural enemies, Environment, Non-target organism.*

### INTRODUCTION

For increasing demand of food for rising global population various hybridized seeds, improved water utilization procedures, and chemical fertilizers and pesticides were used in agriculture during the "Green Revolution". These gradually resulted in various environmental and human health problems (Kohler and Triebkorn, 2013). In this background, genetically modified crops and plants made an entry in the field of agriculture in 1980s. Genetically Modified Organisms (GMO) are those whose heritable genetic materials (DNAs) are modified by the process called Genetic Engineering (Gacovski *et al.*, 2014). Various GM crops or plant types have been developed like, herbicide tolerant (HT), virus resistant (VR), insect pest resistant (PR), *etc.* First commercial GM crop, Flavr Savr tomato, was released in 1994. In India, the GM crop, Bt cotton was cultivated in several parts. Several demerits of Bt cotton were noticed like, adverse effects on pollinator insects, soil microbes, *etc.* Apart from many benefits, the GM crops have various drawbacks. Both the beneficial and harmful aspects of the GM crops and plants have been highlighted in this paper.