

## Genetically Modified Organisms

**Authors :** Mudrika Singhal

**Abstract :** The research paper is basically about how the genetically modified organisms evolved and their significance in today's world. It also highlights about the various pros and cons of the genetically modified organisms and the progress of India in this field. A genetically modified organism is the one whose genetic material has been altered using genetic engineering techniques. They have a wide range of uses such as transgenic plants, genetically modified mammals such as mouse and also in insects and aquatic life. Their use is rooted back to the time around 12,000 B.C. when humans domesticated plants and animals. At that humans used genetically modified organisms produced by the procedure of selective breeding and not by genetic engineering techniques. Selective breeding is the procedure in which selective traits are bred in plants and animals and then are domesticated. Domestication of wild plants into a suitable cultigen is a well known example of this technique. GMOs have uses in varied fields ranging from biological and medical research, production of pharmaceutical drugs to agricultural fields. The first organisms to be genetically modified were the microbes because of their simpler genetics. At present the genetically modified protein insulin is used to treat diabetes. In the case of plants transgenic plants, genetically modified crops and cisgenic plants are the examples of genetic modification. In the case of mammals, transgenic animals such as mice, rats etc. serve various purposes such as researching human diseases, improvement in animal health etc. Now coming upon the pros and cons related to the genetically modified organisms, pros include crops with higher yield, less growth time and more predictable in comparison to traditional breeding. Cons include that they are dangerous to mammals such as rats, these products contain protein which would trigger allergic reactions. In India presently, group of GMOs include GM microorganisms, transgenic crops and animals. There are varied applications in the field of healthcare and agriculture. In the nutshell, the research paper is about the progress in the field of genetic modification, taking along the effects in today's world.

**Keywords :** applications, mammals, transgenic, engineering and technology

**Conference Title :** ICSRD 2020 : International Conference on Scientific Research and Development

**Conference Location :** Chicago, United States

**Conference Dates :** December 12-13, 2020