

**GENETICALLY MODIFIED
ORGANISMS AND ITS
IMPACT ON
ENVIRONMENT: A LEGAL
PRESPECTIVE**

GENETIC MODIFICATION

- Genetic modification is a technology for altering the genetic make up of living organism .
- This technology is called genetic engineering ,is branch of biotechnology in which DNA are modified in lab.

GENETIC MODIFIED ORGANISM

- Genetic modified organism is organism whose genetic material has been altered using genetic engineering technique.
- These are produced by scientific methods that is recombinant DNA technology for production of medicine, enzymes and vaccine

GMOS AND ENVIRONMENT

1. There are more pesticide use in GMOS it makes imbalance composition in soil and produce soil and water pollution.
2. Resulting imbalance in ecosystem so it pollute the environment that is not good for human and other living beings.

IMPACT ON SOIL

1. GMOS pollute the soil, its byproduct are released in soil reduce the soil fertility and produce toxic chemicals in soil.
2. Glyphosate is most widely used herbicide in the world it actually does not break down rapidly in environment and pollute the soil.

IMPACT ON WATER

1. Glyphosate mixed with ground water through polluted soil and produce water pollution.
2. Resulting of this type of water pollution is causes many types of disease related to mouth, throat and kidneys.
3. One study conducted by Garmen university and found very high concentration of glyphosate in urine sample tested.

GM CROPS CAUSING MORE PESTICIDE USE

1. GMOS require more pesticide use on crops, that causes unbalancing in composition of soil and result soil infertility.
2. Pesticide are harmful chemicals dissolve in water and produce water pollution ,resulting many health and agricultural problems.

HERBICIDE AND PESTICIDE DAMAGE HUMAN AND ENVIRONMENT

1. Glyphosate and herbicide are dangerous for ecosystem. These damage the liver of fish and aquatic life.
2. These runoff can reach both ground water and seawater that result water pollution that are responsible for unbalancing of ecosystem.

LEGAL FRAME WORK FOR GMOS

There are many laws for release of GMOS and protection of environment on National & International levels

1. Stockholm Conference, in 1976 UN.
2. Reo Declaration, in 1992 UN.

Existing legal framework for environment protection in India

- Even before India's independence several environmental legislation were existing but the real impetus for bringing about a well-developed framework came only after the UN Conference on the Human Environment (Stockholm, 1972).
- The National Council for Environmental Policy and Planning within the Department of Science and Technology was set up in 1972. later it evolved into a full-fledged Ministry of Environment and Forests (MoEF) in 1985 today i. e. the apex administrative body in the country for regulating and ensuring environmental protection.

Regulating Authorities for GMOS

- 1. Recombinant DNA Advisory Committee (RDAC):**
- 2. Review Committee on Genetic Manipulation (RCGM)**
- 3. Genetic Engineering Approval Committee (GEAC)**
- 4. District Level Committee (DLC)**

Conclusion & suggestions

We suggest that it Requires strict conditions to be placed on the field test to reduce any potential risks to humans, our environment, plants or animals.

The genetically modified plants or animals are not allowed to escape or to be released outside of the trial area, access to the facility must be restricted and scientists must ensure that 'heritable material' (eg, seeds or cuttings) from plants does not escape from the field test site. All field tests must be inspected and monitored on a regular basis to make sure these requirements are being met.