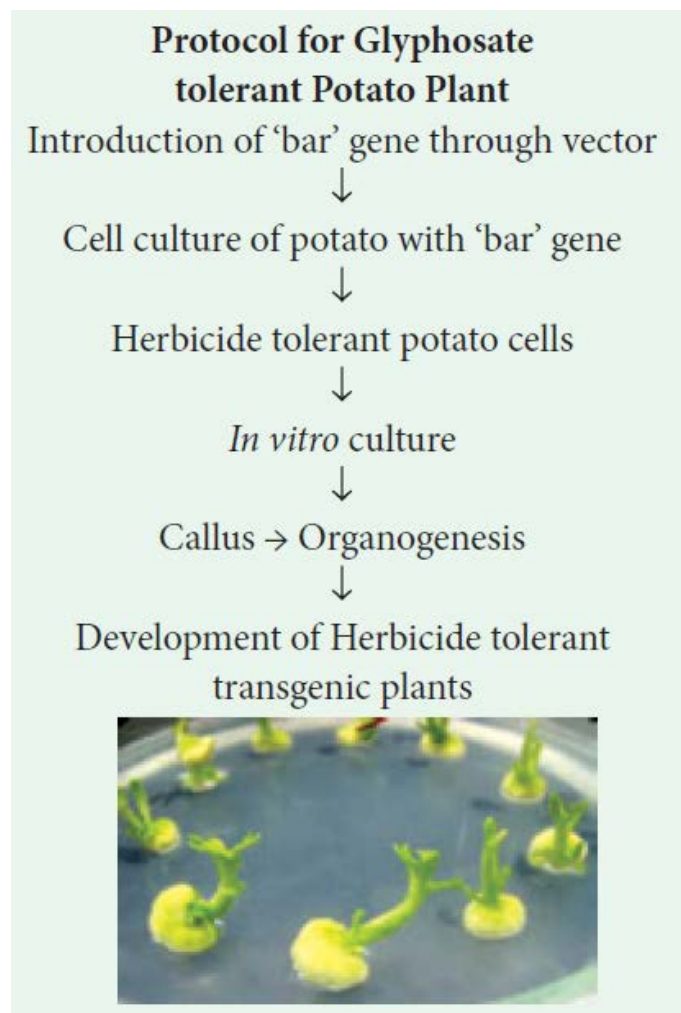


Herbicide Tolerant – Glyphosate

Weeds are a constant problem in crop fields. Weeds not only compete with crops for sunlight, water, nutrients and space but also a carrier for insects and diseases. If left uncontrolled, weeds can reduce crop yields significantly.

Glyphosate herbicide produced by Monsanto, USA company under the trade name ‘Round up’ kills plants by blocking the 5-enopyruvate shikimate-3 phosphate synthase (EPSPS) enzyme, an enzyme involved in the biosynthesis of aromatic amino acids, vitamins and many secondary plant metabolites. There are several ways by which crops can be modified to be glyphosate-tolerant.



One strategy is to incorporate a soil bacterium gene that produces a glyphosate tolerant form of EPSPS. Another way is to incorporate a different soil bacterium gene that produces a glyphosate degrading enzyme.

Advantages of Herbicide Tolerant Crops

- Weed control improves higher crop yields;
 - Reduces spray of herbicide;
 - Reduces competition between crop plant and weed;
 - Use of low toxicity compounds which do not remain active in the soil;
- and
- The ability to conserve soil structure and microbes.