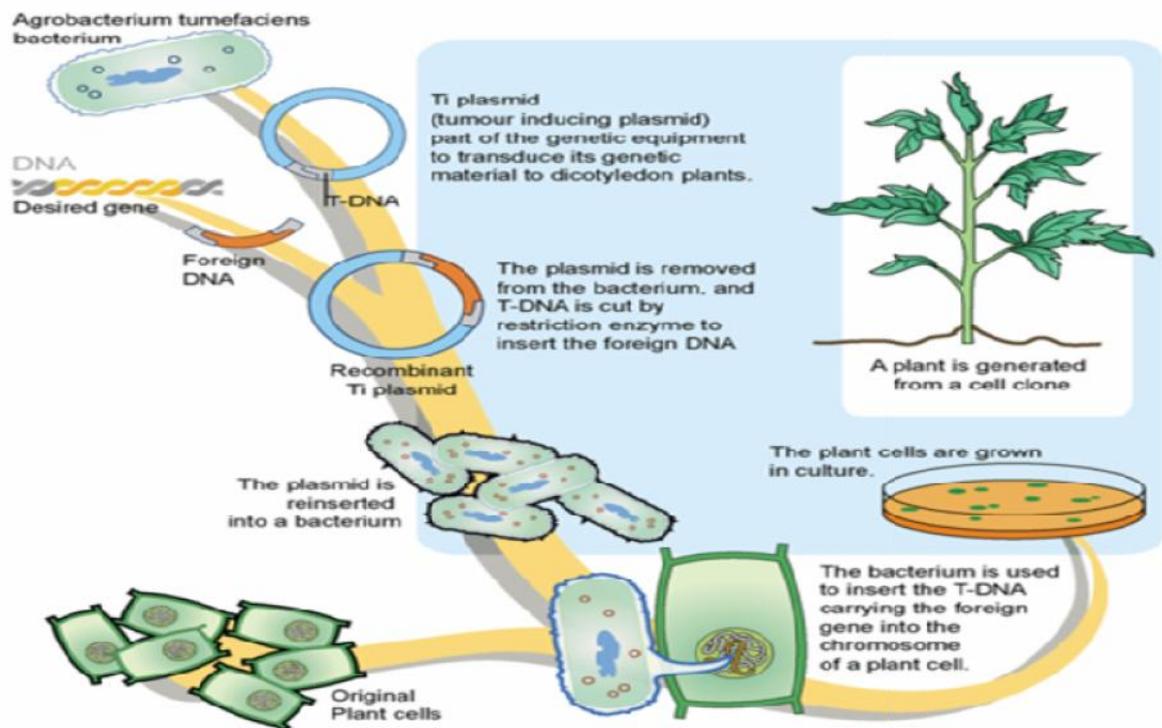


Biotechnology has revolutionized agriculture in many aspects. Think of 'flavr savr' tomato, a transgenic tomato with increased shelf life developed using biotechnology techniques. We developed "golden rice", rice rich in vitamin A which is designed to feed population affecting with vitamin A deficiency diseases like night blindness. We have unlimited possibilities to make a plant or plant product more desirable using biotechnology techniques. Cell culture and protoplast fusion techniques helped us to develop plants with desirable traits. Intergeneric crosses and production of cybrids have become possible. Biotechnology has helped the production of encapsulated seeds, somaclonal variants, stress and disease resistant plants etc. Techniques of micropropagation have been developed in the case of many crop plants.



1. Which of the following statements about basal promoters is true?

- basal promoters can be located in the 3' UTR
- basal promoters are necessary for enhancer trapping
- basal promoters are necessary for heterologous expression
- basal promoters are sufficient for expression in the shoot apical meristem

2. Which of the following is involved in seedless watermelon production?

- Apomixes
- Interspecific crosses
- tetraploidy
- Apomixes and Interspecific crosses

3. Which of the following is present on a Ti plasmid, but not on any component of a binary

**vector system?**

- Vir genes
- GUS genes
- LB, RB
- Opine genes

**4. StarLink is most closely associated with which of the following terms?**

- Cry9
- Cry1
- Glyphosate
- Event 176

**5. The quickest way to produce homozygous breeding lines from heterozygous parents is through:**

- Aneuploidy
- half seed technique
- doubled haploids
- introgression

**6. RAPD molecular markers are**

- recessive
- co dominant
- dominant
- neutral

**7. Most commonly used method for transformation of plants is**

- Protoplast method
- Agrobacterium mediated transformation
- Microinjection
- none of these

**8. Star activity of restriction enzyme means**

- it does not cut at any site
- it cuts at only one site
- it cuts the restriction site more efficiently
- due to change in ionic conc or other componenets it cuts at more sites generating more number of fragments

**9. In tissue culture disease resistance can be obtained by**

- soma clonal variation
- Meristem culture

- Anther culture
- Somatic hybridisation

**10. What does the CT value (cutoff threshold) in real time PCR experiments mean?**

- The lower the value, the higher the transcript amount.
- The higher the value, the higher the transcript amount
- No transcript, if the value is lower than 30
- No transcript, if the value is larger than 30

#### **Answers**

**1. basal promoters are necessary for enhancer trapping**

**2. Apomixes**

**3. Opine genes**

**4. Cry9**

**5. doubled haploids**

**6. dominant**

**7. Agrobacterium mediated transformation**

**8. due to change in ionic conc or other componenets it cuts at more sites generating more number of fragments**

**9. soma clonal variation**

**10. The lower the value, the higher the transcript amount.**