The Torch
Vol. 3 (9)

Overview of artificial seed production

Deval Patel

Since the advent of industrialisation and over the past three decades, natural and manmade calamities have destroyed many ecosystems. The agricultural sector is one such ecosystem that suffers the most. It is one of the most important sectors in many places across the globe, especially the developing countries. Artificial seed production by the use of somatic embryos is one of the key solutions for the large-scale clonal propagation of plants. Artificial seeds can be produced by encapsulating the embryo. This is produced by mixing somatic embryos in sodium alginate and then dropping them in calcium chloride solution to form calcium alginate beads. This ion-exchange reaction results in encapsulation, which provides mechanical protection to plants, controls water uptake and the release of nutrients. Desiccation of somatic embryos is analogous to real seeds as they have a similar quiescent phase, which makes them favourable for production, distribution and storage throughout the year. Apart from the target of meeting requirements, artificial seeds can also be used for transgenic plant production. It can also be implemented on non-seed producing plants, plants with problems in seed propagation, etc. Since this technique is cost-effective and easily reproducible, crops can be produced throughout the year.

Keywords: Sodium alginate, Calcium chloride, Desiccation, Clonal propagation, Transgenic

Citation:
Deval Patel. Overview of artificial seed production. The Torch. 2022. 3(9). Available from:
https://www.styvalley.com/pub/magazines/torch/read/overview-of-artificial-seed-production.