

## Implementing artificial seeds in Indian agriculture

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In countries like India where agriculture has economic and social importance, artificial seed technology has been a boon. Artificial seeds are also called synseeds. Implementation of artificial seed technology can boost the Indian economy as agriculture is the major source of it. Artificial seeds are reasonably inexpensive to supply and simple to handle, plant and transport. Synseed technology is the technology where somatic embryos developed from propagation techniques are encapsulated by the hydrogel. Synseeds are of two types namely, desiccated and hydrated. Production of desiccated synseeds takes place by the use of polyoxyethylene glycol encapsulated somatic embryo. Hydrated synseeds production takes place when the somatic embryos cannot tolerate the stress of desiccation. Synseeds are the alternative to natural seeds. Due to their seed coat or environmental influence, natural seeds fail to germinate. Whereas, artificial seeds provide a 100% guarantee of germination. Synseeds have the adjuvants, such as growth hormones, nutrients and pesticides which ensure the successful growth of crops/plantlets. Farmers would face less loss if artificial seeds are used for farming. Meeting the demand of an increasing population for food grains is now a challenge. The life cycle of the plants can be shortened by synseeds. Also several times, the crops get affected by the pathogens and synseeds provide pathogen resistance to the plants. Synseeds have low cost and fast reproduction rates and also maintain genetic uniformity. Synseeds can be applicable for large-scale monocultures. They are also used in the germplasm storage of endangered species. The use of this technique economises upon the space, medium and time consumed by the traditional tissue culture methods.

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