

## **Artificial (Synthetic) seed technology**

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Need for vegetative propagation of plants has caused that horticultural scientists use methods other than traditional methods for propagation of plants to obtain more and better yields by less expenses. Respecting of copious labour and expenditure of common vegetative propagation methods, on the other hand, useless of them in often cases such as annual horticultural and agronomical crops, it probably substitute by new methods such as propagation by artificial (synthetic) seed in near future.

Artificial seed is a somatic embryo that surrounded by nutritional, protective and growth regulator substances.

Due to embryos are somatic, the importance of this method for every one who is familiar with phenomena such as segregation, genetics and other sterilities, being free of virus diseases, production of F1 seed (require for time, expenditure, copious special and non-special workers and extended farms) and etc. is well known.

Research about the artificial seed , has caused to develop some methods by many scientists that are as follows:

1. Fluid drilling methods, 2. Desiccation a mass of somatic embryos by employing water soluble resin, 3. Encapsulation of somatic embryos by hydrogels application, 4. Desiccation of somatic embryos as naked or without cover , and 5. desiccation of single somatic embryo that coated by water soluble resin.

For the synthesis of the artificial seeds can be briefly pointed out as following stages: Callus production from plant tissues, induction and proliferation of embryogenesis callus, growth and development of embryos, induction of desiccation tolerance in embryos, desiccating and encapsulation of embryos.