

Effects of Freezing on Seed Germination of Orchids Plant

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Abstract: During the cold-moist conditions of winter, stratification occurs that alleviates dormancy in many species enabling spring germination. Orchid seed were first germinated at the base of wild collected potted orchid but germination was unreliable and seedling mortality rates were high. Winter in southeaster United states frequently have warm spells, lasting a few days, interrupted by cold freezing period in this study, the effects of a freeze during stratification and following a warm spell on and seedlings of locally common exotic and native plants were determined. In the laboratory, were exposed to freezing temperatures, following stratification and stratification warm spell, that simulated a cold and then they were incubated at warm temperatures. In a common garden, had cotyledons before a freeze; other species only had roots. Seedlings of had moderate survivorship, whereas those of had low survivorship. In the field, were sown inside and outside (control) of open top chambers. Viability of four species did not differ, probably due to the failure of the too warm above ambient conditions. Thus, freezing may differentially affect seed viability and germination and seedling survivorship of exotic native species and potentially influence competitive interactions between them. The types of method that are used for cryopreservation and the large variation in response of orchids to the cryopreservation method observed in the study emphasize the need for the development of more appropriate protocols for the preservation of orchids. Having flower and then seeds are characteristics of gymnosperm and angiosperm plants. In seed plant the process of reproduction is completely by the formation of the seed. Nutritive tissues of seed provide food for the development of embryo until the new born plant can photosynthesis.

Keywords: Seed, Freeze Effect, etc.

I. INTRODUCTION

In this, the freezing tolerance of seeds and seedling of native and exotic species of locally common trees, shrubs and vines were determined in the laboratory. The relevance of the laboratory results was tested in the field using a common garden experiment and open top chambers that function as miniature greenhouses and simulate warming with climate change episodes that may occur in late winter. Germination is the process of seed developing into new plant first environmental condition must trigger the seed to grow. Usually, this is determined by how deep the seed is planted in the water availability, and temperature. When water is plentiful in the seed fills with the water in a process called an imbibition. A defining characteristic of the orchids is their seeds, which are adapted the wind in dispersal. Orchid seeds are an incredible small and it contains an undifferentiated embryo.

Orchidaceae represents one of the largest families of the plant kingdom and its very specialized traits confer high adaptive ability to different environments with flower that exhibit marked particularity and perform an important role in attracting pollinators. Orchidaceae are slow growing plant with a long juvenile period requiring four or five years of average for the evaluation of flower quality of the progeny and for the acquisition of new seeds. This singular technique has the potential to guarantee the long-term conservation of the germplasm of species threatened with extinction and represent a valuable method for the conservation of the genetic resources of many orchid specimens. The simple method with low initial and maintenance costs, which allow for the storage of biological material for long period of time constitute a technological investment that will provide for considerable growth and trade in orchids.

Orchid flower are known for their natural beauty and for attracting the interest of various producers, making information about their cultivation and storage increasingly revealed. As germination occurs, water is absorbed and the seed coat break allowing the radical to first emerge from the seed.

II. METHODOLOGY

Seed should be thoroughly dried before being frozen as the freezing process can cause moist seed to crack or split. Orchid seeds are easily flushed by rain due to their small size and require a moist fertile. The dry seeds should then be placed in an airtight container to prevent them from absorbing any humidity and taking on any damaging moisture. Read more at Gardening Know Information on Using Seeds That Are Frozen Seeds stored in a refrigerator should be placed near the back of the fridge where they will be less exposed to temperature fluctuations from opening and closing the door. Storage seeds in the freezer will provide seeds with more consistent temperature than refrigerator storage life. Likewise, every 10-degree F. (-12C) increase in temperature can also cost seeds half their storage.

It is the simplest method of the vegetation propagation. New growth of orchid is separated from the plant in monsoon and replanted. The mother plant is cut and separated in two or more parts so that each one has 2-3 buds and one growing shoot. Separation improves the growth of all individuals' plants as space availability improves. New shoots flower in the following seasons. Being wind-dispersal in orchid seeds are naturally dry at released and appears to be desiccated tolerant. The latter is essential for us to be able to preserve in under the very dry and the very cold freezing.

Symbiotic germination used for propagation of temperate Terrestrial Orchids. Seeds are germinated in association with mycorrhizal fungus. Fungus absorbs complex nutrient from the medium and make them available to developing protocol. A symbiotic germination used for propagation of tropical orchid. Seed are germinated in absence of its mycorrhizae association. Media used in complex to improved availability of organic and inorganic nutrients the growing plant. The full-grown new plants should be removed from the aerial cutting is an easy method of orchid propagation seed is quite difficult. Orchid produces vast numbers of tiny seed. Orchid thrives in the sunshine.

III. LITERATURE REVIEW

The literature on the effect of freezing temperatures on the germination of orchids seeds. Some seeds are actually need a cold dormant of the period in order to sprout. Several treatments are effective at the breaking dormancy in mature orchid seed including cold stratification. Other can be held over the winter in the freezer and planted of the following spring and it will still sprout but with a lesser of yield. The first year of perhaps is 80% of seeds will sprout but after freezing only 60%. It varies according to the plant species. Orchid's seed are small with only an undifferentiated embryo. The Moderate freeze 25° to 28° is widely in the destructive to most of vegetation. Severe or hard in freeze and colder causes the heavy damage to most of the plants. Orchid seed are very small extremely light do not contain endosperm and typically have low germination rate 5% under natural condition. Orchid seed are small with only an undifferentiated embryo. Orchid flower are pollinated by the great variety of floral structures temperature effect on germination are unclear as in different species is show different response to cold and warm temperatures. Orchid seed are very small an extremely light do not contain endosperm and typically have lower germination rate 5% under natural condition making them difficult to propagated with conventional method. Orchid flower are pollinated by a great variety of flying animal and their great variety of floral structures. Orchid are single species on insect.

IV. RESULT AND DISCUSSION

It shows that freezing in the liquid air has no appreciable effect on the keeping power of the seeds. It is well known that the seed of orchid species require compatible mycorrhizae fungi for germination. In some germination a test, both on the filter papers and in the soil, it was found in that the freezing not only increased but the germination but it also stimulated in the growth of the seedling. Orchid germination is also relying on factor that generally influence in the success of plant seed. Orchid thrives in sunlight.

In the process of seed germination water is absorbed by the embryo which is result in the rehydration and expansion of the cells. Orchid seed are very minute and range in length. These orchids grow on moist and shaded rocks. Shortly after the beginning of water uptake or imbibition of the rate of respiration to increases and various metabolic a process or suspended or much reduced during in dormancy resume. Orchid germination can take from one to nine months. Seed germination is process of absorb water by the embryo, which resulted in the rehydration and expansion of the cells. The beginning of water uptake or imbibition the rate of respiration increases and various metabolic process suspended or much reduce during the dormancy. After 5 weeks of culture orchid seeds in the flask's embryo were completely discharge from the seed coat and rhizoid. some characteristics such as colour hardness round shape of artificial coated seed.

V. CONCLUSION

The Seeds have the ability to germinate in the presence of the moisture, air, and light under the right temperature, an even in the absence of soil. Our hypothesis stated that freezing seeds for extended the amounts of time would stunt growth and increase. Improper freezing is an also can kill the sum of seeds but in the other seeds may have to be less in fussy spring rising of temperature and moisture and it will be trigger in it. these seeds are to be sprout. Without the preceding cold dormant is period though seeds like these will not sprout.

A symbiotic germination is an excellent technique to study the biotic an abiotic factor of orchid seed. using vitro culture to germinate orchid seed encapsulating these seedlings in alginate gel to make artificial in coated seed. Comprise an embryonic plant and reserve. Preserving were the main work of study. Seed are alive dormant. Outcome of successful of germination is a seedling capable of independent growth.

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