Etymological Idiosyncrasy And Anatomy Analysis Of Intergeneric Hybrid Between Orchis Falcata And Sedirea Subparishii

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Abstract

The presently cultivated kinds of orchid flowers have weak or no fragrance and also the plant needs high temperatures for cultivation. So as to develop a brand new style of orchidaceous plant that's psychrophilic and redolent, intergeneric cross between wild wind orchids and lepidopteron orchids was performed. In 2007, to get intergeneric hybrids from Sedirea subparishii and Orchis falcata with lepidopteron orchids, artificial crosses with a complete of one hundred sixty combos were performed. Most of the cross combos failing because of cross incompatibility once intergeneric crosses, with no pod formation, premature pod dropping once pod formation, and pod formation that failed to turn out seeds. From among these, the crosses that fashioned traditional seeds and germinated to supply viable plants enclosed Doritos pulcherrima × S. japonicum, N. falcata × D. pulcherrima, and N. falcata × P. eustress.

From the hybrid specimens obtained through these crosses, two superior lines were selected supported their floral morphology, range of flowers, hardiness, and fragrance. Comparative analyses of the morphological and body traits were performed between the chosen hybrid specimens and their folks. The flower and inflorescence characteristics of the chosen hybrids exhibited intermediates traits of each the parents; but, additional traits from the lepidopteron orchids were hereditary. For pollinate traits, each 819-3B and K9256 specimens exhibited intermediate kinds of their folks in terms of their form and size. within the case of 819-3B specimen, a high degree of attribute similarity thereupon of D.

keywords: meiosis, ploidy analysis, pollen masses, psychrophilic, sterility
Introduction

Moth orchids have elegant flowers with smart longevity and are a promising floral plant with an enormous market potential and price, as indicated by their prime standing among potted floral plants (Been 2011). The bulk of the lepidopteron orchids cultivated in Asian nation consisted of genus Phalaenopsis|monocot genus|liliopsid genus|monocot genus|monocot genus|liliopsid genus|tracheophyte developed through artificial crossing among Phalaenopsis and Doriteanopsis tracheophyte developed through breeding between Doritos pulcherrima and Phalaenopsis. As lepidopteron orchids are primarily tropical or thermophiles floral plants, South Korean farmers incur high value of heating throughout cultivation within the winter season. Therefore, to develop a brand new orchid tracheophyte that adapts well to the lower temperature climate of S. Korea is very important. Wind orchidaceous plant flowers are native to the southern islands of S. Korea and may survive throughout the winter season within the wild, and their two necessary varieties embody Sedirea subparishii Linden &ChB. f.

N. falcata leaves are narrower than those of S. japonicum, and also the petals are long and skinny, with persimmon-like fragrance that's refined and fewer intense than that of S. japonicum. whereas the plant is widespread among customers for its fragrance and wintering capability because of its psychrophilic nature; it's disadvantages in this the flower is transient and also the flower color is apparent white (Hur 2006). On the opposite hand, orchid flowers keep within the bloom for a protracted time (2-6 months), and exist during a style of flower colors and shapes, though the flowers are thermophiles in nature and customarily no fragrance.

Materials and ways

Plant materials

The lepidopteron orchidaceous plants used for intergeneric crossbreeding enclosed more or less eighty nine species collected from the Joseph Wu orchid in Taiwan and also the University of USA. The sixty two strains of untamed wind orchids utilized in intergeneric conjugation
enclosed S. japonicum and N. falcata purchased from the Agricultural Technology Center of Geode-City in S. Korea and S. japonicum from the Tsinghua Bio-one Seed Company.

Artificial crossing

With reference to the unreal crossbreeding to develop intergeneric hybrids of wind orchids and lepidopteron orchids, a complete of one hundred sixty crossbreeds were generated in 2007. The crossbreeds consisted of twenty nine S. japonicum × genus Phalaenopsis, 65

Intergeneric hybrid development and choice of elite lines

once playing artificial crossing, formation of seed pods was examined. just in case seed pods were fashioned, sterile propagation on the Hyponex medium was performed to amass the intergeneric hybrids. once propagating the seeds, the seed germination rate was schematically investigated and also the germinated seedlings were subjected to flask cultivations, from that the specimens with complete root and shoot formation were acclimated to the greenhouse setting for two weeks before transplantation. the event of the spermatophyte for intergeneric hybrids from twelve intergeneric cross combos 890 hybrid spermatophyte were obtained. Among the intergeneric hybrids that had bloomed, two superior lines (8193B and K9256) were selected supported the floral morphology, floral arrangement, and also the range of flowers.

Fertility of intergeneric hybrid

To amass the relative of the intergeneric hybrid specimens, back-crossing and self-crossing of seven combos with each the oldsters were performed. once the unreal crossing, observations were created concerning the fertilization standing, pod formation, and fall-blooming development within the plants.
Result and Discussion

The morphological characteristics of intergeneric hybrids: From a complete of one hundred sixty cross-combinations performed to get intergeneric hybrids, two strains that were psychrophilic and showed superior floral form and color were selected (819-3B and K9256). Once the intergeneric hybrid (819-3B) obtained from the crossing of D. pulcherrima and S. japonicum began to bloom, floral characteristics were examined to match the morphological traits of the relative to those of the oldsters. As incontestable, the flower from D. pulcherrima was more or less three cm in size and was of pure white color. Its lip and lateral lobes were yellow, and therefore the lateral sepals also had yellow tips. The two pollinates were connected to every alternative, that split into two strands to create a complete of four pollinate.

Investigation of spore cellular division in crossed folks and also the hybrids

Investigation of the optimum amount for spore cellular division within the folks of D. pulcherrima × S. japonicum cross and F1 hybrids was conducted. The inflorescence of D. pulcherrima was upright and showed endless bloom of ten flowers, and also the buds of every flower were collected instantly once the bloom for examination. The examination disclosed that the second bud from the primary flower exhibited a high body frequency which the bud size used at that point was 6-7 millimeter.

Ploidy analysis

Studies on the body behavior within the intergeneric hybrids need a big quantity of your time and energy and, even within the case of ploidy analysis, microscopic examinations disclosed inaccurate results (Singh 1984). To look at the relevance of flow cytometer, distinction analysis was performed on the results from microscopic examination of chromosomes and flow...
cytometer. The comparative results of the microscopic examination of chromosomes and flow cytometer during this study.

References

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