ISSN: 2319-5584
Global Journal of Biology, Agriculture & Health Sciences

OPEN ACCESS Freely available online

Opinion

A Short Note on Natural Hybridization

Kaida Chen*

College of Plant Protection, Nanjing Agricultural University, Nanjing, China

DESCRIPTION

Natural hybridization is an important evolutionary process that occurs in some groups of plants, and offspring are ready to take advantage of new habitats, which can lead to the formation of new species. The discovery of natural hybrids is generally intriguing, but some observers take it to the extreme and show that they are more interested in hybrids than the parent species involved.

Natural crossing is a common phenomenon in vascular plants. Hybridization is considered an important evolutionary force as it can lead to

(1) An increase of the intraspecific genetic diversity of the participating populations

(2) The creation of new species

(3) Species extinction through genetic assimilation

(4) The generation of highly invasive genotypes.

Since plant hybridization is important in evolution, it is very important to identify the hybrid individual. Chromosome numbers, morphological features, and chemical features have limited use for hybrid detection in the absence of DNA fingerprinting techniques, but their studies provide insights into the ecological performance of hybrids. This is especially important when hybridization results in evolutionary novelty in the form of polyploidy, transgressive character expression, or expression of new secondary metabolites that are not present in the parent species.

By a broader definition, hybridization is considered to be the cross fertilization of individuals from a distinct population based on one or more genetic traits. A broader definition of introgression includes the transfer of genes between genetically distinct populations. These definitions of hybridization and introgression have the advantage of being independent of the concept of species. Therefore, under this definition, hybridization can occur between species, between subspecies, or between differentiated populations of a single species.

Interspecific hybrids

Interspecific hybrids are progeny that result from hybridization of individuals of different species, and intraspecific hybrids are hybrids that result from hybridization of individuals within a species and are generally wholly or partially sterile.

Similar but different

Hybrid offspring with similar general appearance but different genetic makeup can result from natural crossing of related taxa.

Intergeneric hybrids

Intergeneric hybrids can be a cross between plants of two different genera within the same family. Although the seeds of these hybrids are sterile, pollination produces hybrids because they are so closely related.

Factors influencing natural hybridisation

Natural hybridization of native orchids usually occurs only when the older ones grow in the immediate vicinity and when the flowering times overlap. Both species need to share pollinating agents, but only for a short period of time when pollen transmission occurs. The abundance of parent species at each site is directly proportional to the occurrence of natural crosses. Events that cause massive flowering, such as summer wildfires and seasonal rains, also increase the likelihood of natural crosses.

Many orchid species have specific pollinators, but environmental factors can cause the barriers that separate them to collapse. Natural hybrids are more common in more disturbed areas (cultivated habitats, roadsides, etc.) than in the natural environment, probably due to disruption of isolating mechanisms or altered foraging behavior of pollinating agents.

Absence of natural hybrid

Many species grow sympatrically and have overlapping flowering times, but do not intersect. Often this is due to strict isolation of pollinating agents, as occurs in species pollinated by sexual deception, but other factors may be involved.

For example, *Rhinerrhizopsis moorei* and *Pomatocalpa macphersonii* share a native bee, an equivalent pollinator, within the Iron Range region of northern Queensland, but are isolated by the location of insect pollinators. When visiting *R.moorei*, pollinarium deposits on top of the bees and that of *P.macphersonii* attaches to the thorax. Similarly, via a specific route, all five native Cryptostylis species are pollinated by the equivalent *Parasitoid wasp*, *Lissopimpla excelsa*, but looking for more than one sympatric species in eastern Australian flowers is not uncommon, but natural hybrids are unknown.

Correspondence to: Kaida Chen, College of Plant Protection, Nanjing Agricultural University, Nanjing, China, E-mail: chenkaida346@hotmail.com

Received: 07-Jan-2022, Manuscript No. GJBAHS-22-15435; **Editor assigned:** 10-Jan-2022, PreQC No. GJBAHS-22-15435 (PQ); **Reviewed:** 21-Jan-2022, QC No. GJBAHS-22-15135;**Revised:** 27-Jan-2022, Manuscript No. GJBAHS-22-15435(R); **Published:** 03-Feb-2022, DOI: 10.35248/2319-5584.22.11.1000123

Citation: Chen K (2022) A Short Note on Natural Hybridization. Glob J Agric Health Sci 11: 123.

Also, artificial crossing tests do not yield capsules that indicate the presence of chemical or genetic barriers to mating.

Persistence of natural hybrids

Some natural hybrids of terrestrial orchids are not yet ready to breed, have a limited lifespan, and sometimes have only 2 or 3 seasons. Others live longer. In contrast, vegetatively propagating terrestrial hybrids are ready to form clonal masses or colonies and can last for several years, at least as long as appropriate environmental conditions are present. For epiphytic orchids, natural hybrids tend to be long-lived and should survive as a single plant for several years, usually without the vitality to reproduce. In rare cases, local vegetative propagation may occur by assembling aerial growth, as in the case of *Vappaculum superbiens*.

Successive hybridisation

Many natural hybrids are sterile and cannot participate in further hybridisation. However, some hybrids are fertile and can produce backcross with second-generation offspring or parents. Complex hybridisation can produce a variety of variable hybrid offspring, resulting in hybrid herds. This situation has been observed in various species of caladenia and D. chryseopsis in southern Victoria, and filamentous Jonesiopsis in Western Australia.