

Orchidaceae: The Importance of Research on Its Preservation

RICARDO TADEU DE FARIA ⁽¹⁾

Orchidaceae family is one of the numerous angiosperms: 8% of all plants with flowers are from this family. It presents more than 25 thousand species in the world and 10% of them are in Brazil. Spread in hundreds of genders, this number rises each year due to new descriptions.

In Brazilian territory, orchids are part of every biome, especially on Amazônia, Cerrado and mostly, Mata Atlântica, which has the biggest epiphytes diversity in America. However, orchids are at risk of extinction in Brazil due to human action.

Extinction is a recurring problem, which harms especially orchids, even though it reaches all species of plants. Some of the reasons orchids are one of the most harmed species are its natural habitat destruction, its predatory collection and mainly its development characteristics, which involve complex biological relations and depend strongly on a balanced ecosystem.

Aiming its gender and species conservation, some activities are important to aware population about the importance of preserving these species, such as implementing courses, exhibitions, lectures and symposiums. Likewise, scientific researches are essential to reach this objective.

Researches are developed in diverse areas of knowledge, such as vegetal physiology, botany, systematic, evolution, floral and reproductive biology. However, the most important actions to promote orchids preservation are species survey, cryopreservation, propagation, domestication, hybridization and management.

Regarding these actions, floristic survey is the activity that aims to identify the endemic species in a specific area (LANA et al., 2018). This step is important to study ecosystems because it provides relevant parameters, such as local diversity, which is helpful in environmental diagnosis to point threatened species. After the species identification and their locations description, it is possible to collect plants, capsules and seeds aiming to propagate and conserve germplasm in laboratory, and thus guarantee genetic material for future reintroductions in ecosystems.

Cryopreservation is used in seeds, pollen and buds conservation in laboratory for indeterminate extent of time, by conserving tissues at low temperatures to reduce its cellular metabolism to the lowest possible level. Even though it is a widespread technique, studies are necessary to deal with each species and each tissue behaviors during their freezing and thawing (VENDRAME et al., 2014).

Micropropagation is used to multiply orchids due to some of its family characteristics and because this technique has many advantages, such as scale and speed

in multiplication. Besides that, micropropagation is important in some hybrids commercial production once it allows plants cloning and obtaining genetically identic homogeneous population.

Although Brazil has a large number of native species with ornamental potential, orchids domestication is still poorly studied due to the plants long juvenile periods and their low number and short duration of flowering. Species hybridization is a breeding method that seeks to solve the previously mentioned issues, combining agronomic characteristics of interest from parental plants such as blooms increase per year, reduction of juvenile period, increase in flower number and longevity, among others (COLOMBO et al., 2017).

Hence, researches that consider particularities of genders and developmental stages directed to genetic breeding, conservation and laboratory propagation, as well as production techniques and appropriated maintenance, are important in species domestication.

Therefore, developing research projects with orchids in the mentioned areas above allow a rational production that meet the collectors and domestic consumers market demands, reducing extractive pressure on ecosystems, contributing to preservation and conservation of this fascinating botany family.

We invite all readers to appreciate the article on Orchidaceae breeding here in this volume and to send new scientific contributions to this magazine. Because knowledge is required to preserve!

REFERENCES

- COLOMBO, R.C.; HOSHINO, R.T.; FERRARI, E.A.P.; ALVES, G.A.C.; FARIA, R.T. *Cattleya forbesii* x *Cattleya bowringiana*: a new hybrid of *Cattleya* orchid. **Crop Breeding and Applied Biotechnology**, v.17, n.2, p. 184-186, 2017. DOI: <http://dx.doi.org/10.1590/1984-70332017v17n2c28>
- VENDRAME, W.; FARIA, R.T.; SORACE, M.; SAHYUN, S.A. Orchid cryopreservation. **Ciência e Agrotecnologia**, v.38, n.3, p. 213-229, 2014. DOI: <http://dx.doi.org/10.1590/S1413-70542014000300001>
- LANA, L.G.; ESCOBAR, T.F.; GODINHO, E.M.M.; PELUZIO, L.E. Survey of Orchidaceae species of Serra das Cabeças, in Parque Estadual da Serra do Brigadeiro, Araponga-MG, Brazil. **Horticultura Brasileira**, v.36, n.2, p. 156-166. 2018. DOI: <http://dx.doi.org/10.1590/S0102-053620180202>.

DOI: <http://dx.doi.org/10.14295/oh.v24i2.1459>

⁽¹⁾Professor of Floriculture and Landscaping in Londrina State University, Associated Editor of Ornamental Horticulture, Member of Brazilian Society for Floriculture and Ornamental Plants (SBFPO) and International Society for Horticultural Science (ISHS). CNPq Research Productivity Scholarship. Londrina-PR, Brazil. faria@uel.br