

practice and relevant to the preservation of the Orchidaceae species and the environment.

P0020 – ePoster

Mycorrhizal fungi in *Cattleya* (Orchidaceae) species occurring in Atlantic Forest and Cerrado, Brazil

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The current knowledge of threatened orchid species in Brazil is still very incipient not only due to the lack of specific studies, but also to the megabiodiversity of orchid species. The official Redlist of Brazilian flora considers around 356 vascular plant species, which includes 34 representatives of Orchidaceae. Among 25,000 natural species distributed throughout the world, 1779 are included in any conservation status, which represents 14 % of them are endangered species. Brazil presents 2,400 species of orchids, with few data related to the conservation status of natural populations. Due to the fact that the distribution of these species concentrates on the Atlantic Forest, specially on the southeast region, a hotspot with less than 10 % of its original ranging, it becomes essential to study the natural populations as well as ex situ conservation techniques. Some of the orchid species selected for this study are mentioned on the Redlist of Brazilian flora and occur mainly in Atlantic Forest and Cerrado areas of the Minas Gerais and Rio de Janeiro States. *Cattleya jongheana* (Rchb.f.) Van den Berg and *C. perrinii* Lindl., are epiphytic species with high ornamental value and with a restricted geographic range. As well, *Cattleya caulescens* (Lindl.) Van den Berg, a Campo Rupestre terrestrial orchid is found in large populations in private areas of iron mine at Minas Gerais. *Cattleya cinnabarina* (Bateman ex Lindl.) Van den Berg also occurs in Campo Rupestre area and, at the moment, it is the only species studied not cited on the Redlist. The major objective is to establish a method of in vitro propagation of these four orchid species and to evaluate the biodiversity of mycorrhizal fungi associated with these orchids. Thus, the strategies to be used to achieve this goal are: (a) to identify morphologically and molecularly mycorrhizal fungi associated with orchids; and (b) to evaluate methods of in vitro propagation and acclimatization of orchids grown in laboratory. To date, a variety of binucleate isolates, probably of the genus *Epulorhiza* were obtained with different colony diameter, colour, border and aerial mycelia aspect. DGGE analyzes have been conducted to confirm this fungi biodiversity. Seeds of orchid species were inoculated, individually, using isolates of *Epulorhiza* and incubated in light. Stages of development were performed after 3 and 10 weeks of inoculation and also for control treatment (OMA and Knudson). After 3 weeks, in the symbiotic culture, the development stage of elongation of first leaf was observed, against the major stage in the uninoculated control that was the appearance of the protomeristem. Our results will contribute to the knowledge of the biodiversity and ecology of orchids, mycorrhizal fungi and therefore the habitat. Finally, studies with emphasis

on conservation can also assist in the management of impacted areas and encourage the creation of groups of environmental education to work with the local population. (Support: AOS,CNPq,FAPEMIG)

P0021 – ePoster

Effect of mother plant age on germination and size of seeds and seedlings in the perennial plant

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The performance of seeds and seedlings in relation to the age of the mother plant was studied in *Carex secalina*. Seeds of this sedge can differ substantially in size. We planted 100 *C. secalina* individuals from three populations in a common garden and followed them for four years. We found that mean seed mass varied with plant age, but the pattern of variation was population-specific, with only one population showing significant reduction in seed mass with age. Similarly, germination rate changed with age differently in different populations. The relationship between the age of the mother plant and the length of emerged seedlings did not differ between populations. In spite of the fact that plant size and mean seed mass exhibited similar patterns of variation within populations, there was no correlation between these two variables at the level of individuals. This means that the size of *C. secalina* tufts does not determine how big the seeds will be. Moreover, there was no relationship between mean seed mass and the length of seedlings. Presumably, factors intrinsic to each plant determine the production of either small or large seeds in a population-specific way.

P0022 – ePoster

Assessing air quality of public parks in Bangkok, Thailand from photosynthesis and chlorophyll fluorescence of the transplanted lichen *Parmotrema tinctorum* (Nyl.) Hale

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Lichens are recognized as effective biomonitor of air pollution. The objective of this study was to use lichen to assess air quality of public parks in Bangkok by observing photosynthesis and chlorophyll fluorescence of transplanted lichen. *Parmotrema tinctorum* (Nyl.) Hale was transplanted from Khao Yai National Park, the unpolluted area, to ten public parks in Bangkok. Photosynthesis and chlorophyll fluorescence of the lichens were measured before and at different time intervals after transplantation. The results showed that photosynthesis of the transplanted lichens declined to 15–60% of the pre-transplanted value after 45 days of exposing to urban air, whereas Fv/Fm varied to 10–33% of the original condition. Transplanted lichens in the city center were seriously affected than those in the sub urban areas. The study demonstrated that lichens can be used to assess air quality of public parks in Bangkok.