

# Atlantic Forest: research and environmental education as instruments to conservation.

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## Introduction



The Rio Doce State Park, one of the remnants of the Brazilian Atlantic Forest in the Minas Gerais State.

The Botanic Garden of the Fundação Zoo-Botânica de Belo Horizonte, Brazil, develops cultivation studies with native species and environmental education actions according to conservation policies. The Brazilian Atlantic Forest is one of the 25 biodiversity hotspots in the world. This project consisted in cultivation experiments with species from Rio Doce State Park, one of the remnants of this biome in the Minas Gerais State.

## Results

Until October 2006, seven trips were made to PERD. All plants collected and cultivate numbers are presented in Table 1.

- The threatened species maintained in greenhouse are listed on Table 2 with their respective categories, according to Brazil (2005) and Minas Gerais (2006) Red Lists of threatened plants.
- A new record was found for Minas Gerais State: *Pleurothallis graveolens* Pabst. (Orchidaceae). This orchid was previously cited like endemic of a neighbour state, and its real distribution is not well-known.
- The cultivation results are shown on Table 1 and Graphic 1.
- The germination periods varied among the species from 9 to 60 days to radicle or plumule emission in both tests.
- There are 1883 plants being cultivated, and 156 species are represented.

## Material and Methods

The botanic material for the cultivation experiments and identification was collected in Rio Doce State Park (PERD), Marliéria, Minas Gerais (42°38'W and 19°36'S).

- Seeds were submitted to two different germination tests: in germination chamber under 12 hours of light and 12 hours of darkness, 28°C constant temperature; and in a greenhouse on organic substrates (that had some compounds like: sand, vermiculite, Pinnus bark and litter).
- The stem cuttings were maintained in three different substrates to verify root emission: sand, vermiculite and coal.
- Seedlings were acclimatized on a greenhouse with controlled irrigation.
- Exsiccates were registered at the herbarium (BHZB) and fruits at carpological collection.

All cultivated plants will compose a glasshouse were educative activities will be developed.

TABLE 1: The numbers of all trips

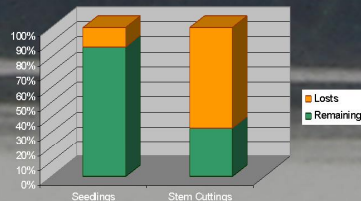
TRIP	SEEDLINGS			STEM CUTTINGS			SEEDS		Total of species
	Total planted	Losses	Remaining	Total planted	Losses	Remaining	Total sp planted	Spp germinated till 24/09/06	
1st. Trip (06 to 08 Jul/05)	65 (36spp)	19 (11spp) [29%]	46	18(5spp)	15(4spp) [83%]	3	15	10	49
2nd. Trip (31 oct. to 02 nov/05)	158 (42spp)	28 (8spp) [17%]	130	47(12spp)	33(8spp) [27%]	14	18	10	65
3rd. Trip (05 to 09 fev/06)	166 (62spp)	31 (14spp) [18%]	135	74(9spp)	25(5spp) [33%]	49	6	3	70
4th. Trip (05 to 28 mar/06)	81 (39spp)	3 (3spp) [4%]	78	17(3spp)	9(2spp) [52%]	8	7	0	51
5th. Trip (19 to 22 may/06)	115 (44spp)	7 (7spp) [6%]	108	96(1sp)	94(1sp) [98%]	2	3	2	63
6th. Trip (26 to 29 jun/06)	157 (40spp)	16 (1spp) [10%]	141	5(2spp)	0	5	9	7	41
7th. Trip (15 to 18 sep/06)	168 (40spp)	17 (9spp) [10%]	151	37(5spp)	22(1sp) [59%]	15	-	-	45
Total	910 (125spp)	121 (30spp) [13%]	789 (102spp)	294(23spp)	198(15spp) [67%]	96(12 spp)	42	20 1998 juvenile plants)	156 (1863 plants)

Table 2: Threatened plants that has been cultivated

Family	Specie	Red List	Categorie
Costaceae	<i>Chamaecostus cuspidatus</i> (Nees & Mart.) C. Specht & D. W. Stev.	Brasil (2005) e MG (2006)	EN(BR), VU(MG)
Arecaceae	<i>Euterpe edulis</i> Mart.	Brasil (2005) e MG (2000)	EN(BR), VU(MG)
Sapotaceae	<i>Chrysophyllum imperiale</i> (Linden) Benth. & Hook.f.	Brasil (2005) e MG (2006)	EN (BR, MG)
Heliconiaceae	<i>Heliconia angusta</i> Vell.	MG (2006)	CR (MG)
Rubiaceae	<i>Psychotria ipecacuanha</i> (Erol.) Stokes	Brasil (2005) e MG (2006)	DD (BR), CR (MG)

CR. Critically endangered, EN. Endangered, VU. Vulnerable, DD. Data Deficient. (IUCN, 2006)

Graphic 1: Representative percentage of the cultivation of seedlings and stem cuttings



*Chamaecostus cuspidatus* (Nees & Mart.) C. Specht & D. W. Stev.



*Sarcoglottis fasciculata* Schltr.



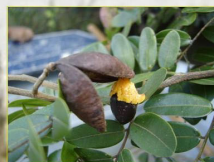
*Heliconia angusta* Vell.



*Pleurothallis graveolens* Pabst



*Erythronium brasiliensis* Nees & Mart.



*Copaifera langsdorffii* Desf.



Seedlings of *Costus scaber* Ruiz & Pav.



The Atlantic Forest Glasshouse



The Atlantic Forest Glasshouse: a new project

## Conclusion

The success in cultivation allows maintenance of an *ex-situ* germoplasm bank that will be used to assembly an exposition on a glasshouse focusing the Atlantic Forest, where environmental education activities will take place.



Greenhouse where the seedlings are maintained

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