

SELECTION OF FORESTRY SPECIES FOR THE RECOVERY OF ALTERED LANDSCAPES  
IN THE BRAZILIAN AMAZON REGION<sup>1</sup>

Edinelson J. M. Neves<sup>2</sup> & Acilino do C. Canto<sup>3</sup>

1- INTRODUCTION

In developing countries, the inadequate use of natural resources, for different purposes, is causing a gradual elimination of tropical forests, with irreversible loss of the genetic diversity of some species, soil erosion and abandonment of extensive areas, after depletion of its ephemeral fertility.

In Brazil, particularly in the Amazonia, satellite images indicate that around 415.000 Km<sup>2</sup> of primary forests have been felled until 1990. It is estimated that 60% of this area, i. e. 250.000 Km<sup>2</sup>, are under different stages of degradation and need to be recovered, as an alternative for further deforestation.

The use of trees in abandoned and/or degraded areas is an important measure to avoid soil erosion and loss of nutrients, which result in the soil degradation.

In order to select the most suitable forestry species for this purpose, the "Centro de Pesquisa Agroflorestal da Amazônia Ocidental" - CPAA/EMBRAPA - has started, since 1991, different experiments whose preliminary results are presented here.

2- MATERIAL AND METHODS

The experiments are located at Manaus, State of Amazonas, at an altitude of 50 m above sea level, 3<sup>o</sup> 8' south latitude and 59<sup>o</sup> 52' west longitude. The climate is of the Af type, according to the Köppen classification, with 26,0<sup>o</sup>C of annual average temperature and 2.500 mm rainfall.

Selection of forestry ...  
1993 FL-FOL5618



CPAA-20992-1

<sup>1</sup>Paper presented at the Symposium of useful Tropical Plants, Hamburg/Germany. Set/93.

<sup>2</sup>Eng<sup>o</sup> Flor., MSc. CPAA/EMBRAPA. P.O.Box 319. Manaus/AM.

<sup>3</sup>Eng<sup>o</sup> Agro., Dr.

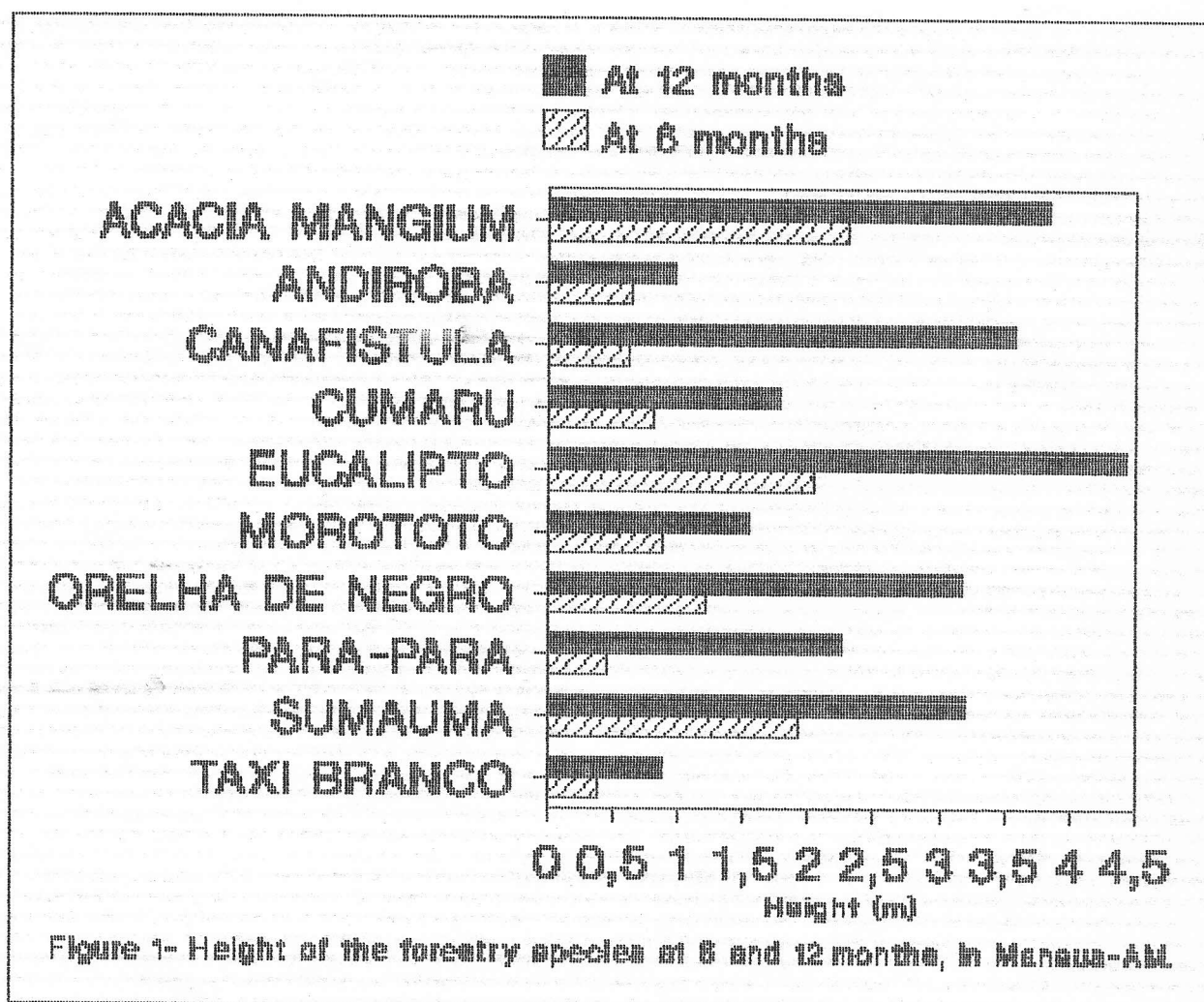
The soil is a very clayey, dystrophic, Yellow Latosol, with the following chemical characteristics: pH= 4.8 ; N= 0.17% ; P= 9 ppm ; K= 72 ppm ; Ca= 1.25 meq/100 g ; Mg= 0.35 meq/100 g and Al= 1.4 meq/100 g. The primary forest had been felled 10 years ago to plant rubber trees (*Hevea brasiliensis*) with green cover of *Pueraria phaseoloides*. The rubber trees were removed in 1989, due to severe leaf diseases, but the green cover of *Pueraria* remained on the plots.

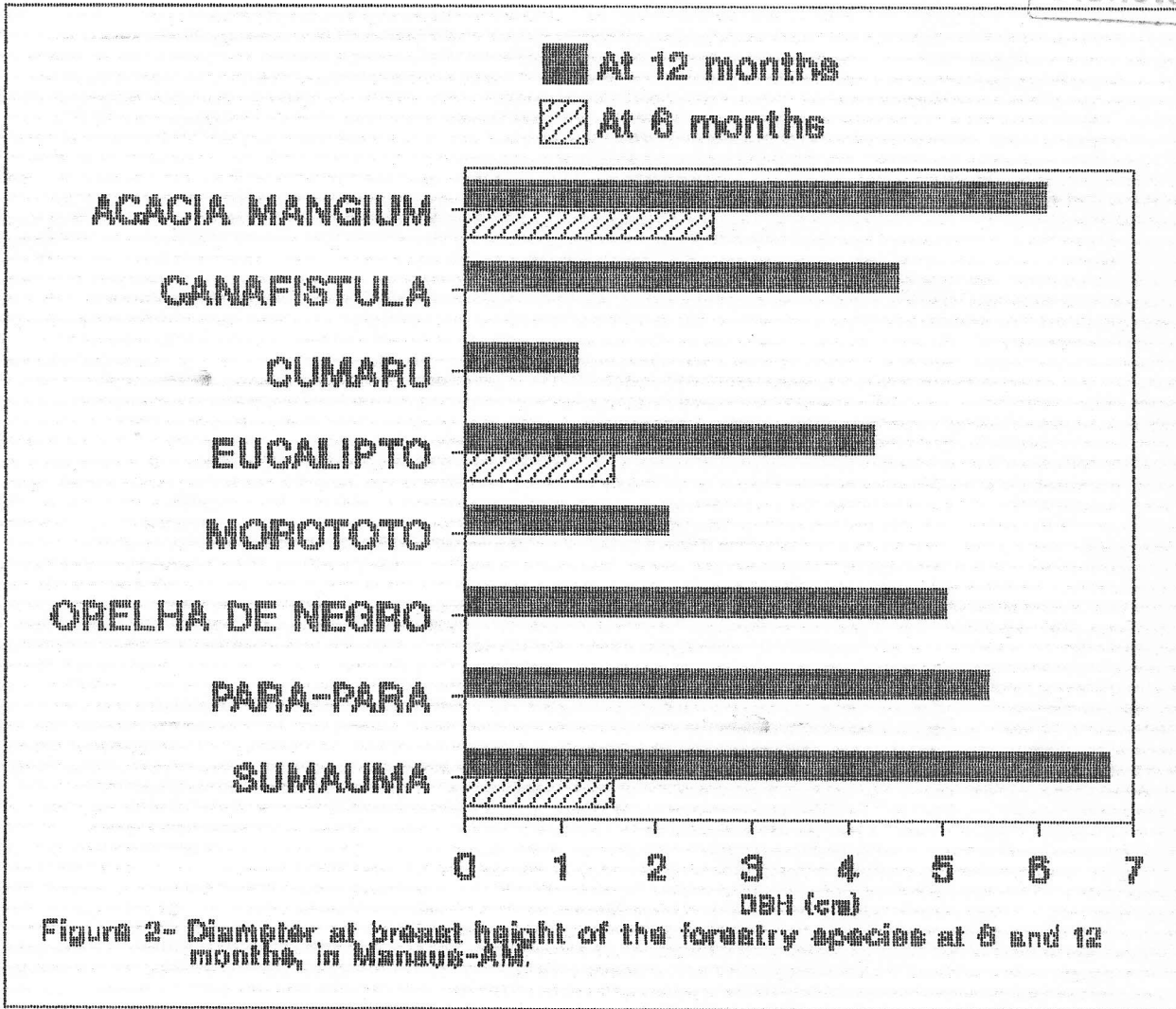
Data are presented of the most promising 10 species, out of 50 being tested (TABLE 1). These species are growing in plots at full sun, in rows of 10 plants for each species, with 3 m between plants and 3 m between rows. Height (H), diameter at breast height (DBH) and survival (%) were measured every 6 months in the first year and every 12 months from the second year on.

TABLE 1. List of the most promising 10 forestry species in arboretum at CPAA.

COMMON NAME	GENUS SPECIES	FAMILY
Acácia mangium	<i>Acacia mangium</i>	Leguminosae
Andiroba	<i>Carapa guianensis</i>	Meliaceae
Canafístula	<i>Peltophorum dubium</i>	Leguminosae
Cumarú	<i>Dypterix odorata</i>	Leguminosae
Eucalyptu	<i>Eucalyptus urophylla</i>	Mirtaceae
Morototó	<i>Dydimopanax morototoni</i>	Araliaceae
Orelha de negro	<i>Enterolobium contortisiliquum</i>	Leguminosae
Pará-pará	<i>Jacaranda copaia</i>	Bignoniaceae
Sumaúma	<i>Ceiba pentandra</i>	Bombacaceae
Taxi branco	<i>Sclerolobium paniculatum</i>	Leguminosae

In a broad sense the 50 species studied are displaying a good performance. Among them the following species are outstanding with regards to the very fast growth in both height (figure 1) and stem diameter (figure 2): *Acacia mangium*, "andiroba", "canafístula", "cumarú", "eucalyptus", "morototó", "orelha de negro", "pará-pará", "sumaúma" and "taxi branco". All the species, including the exotics, had an excellent survival up to 12 months, from 90 to 100%. "Andiroba" (meliaceae) started to suffer attacks of *Hypsipyla grandella* at the age 12 months.





#### 4- CONCLUSIONS

The species listed in this paper display good adaptation to the environmental conditions similar to those of the location of the experiments.