Introduction

The Forest Institute (INFOR), from 60’ years has carried out a variety of breeding programs of several species of forest interest, such as Eucalyptus genus, in order to increase and diversify the forest production in different parts of the country. In such programs have been selected plus tree based on its interest trait such as: volume, form, pulpwood yield, minimal growth stresses, resistance to abiotic stresses (cold and drought) and tolerance to pests and diseases. Explorations performed in forest plantations of de E. globulus and E. camaldulensis massively attacked by these insects in the area of Cauquenes, Chile allowed to the identification of 3 plus tree of E.urophylla hybrid, which possess a great tolerance to attack of Gonipterus and remarkable growth, for this reason were incorporated into assessment programs to resistance Gonipterus in company CMPC.

Methods & Materials

Figure 1. a) Explorations performed in field testing in Cauquenes (Latitude -35.888075 and Longitude -72.113724), VII Region, showed great presence of Gonipterus scutellatus attacking the eucalyptus trees b) Plus tree of a Eucalyptus urophylla hybrid, which possess a great tolerance to attack of Gonipterus and remarkable growth c) micro cutting obtain of a plus tree previously selected of E. urophylla hybrid d) grafts obtained with micro cutting of E. urophylla hybrid onto E. globulus.

Figure 2. Different stages of direct organogenesis in relation to the number of weeks, these were performed in different periods. Stage of multiplication obtained 84% at 12 weeks. Stage of elongation obtained a 50% under conditions of etiolation at 12 weeks. Simultaneously was obtained roots under conditions etiolacion, obtained a 50% at 12 weeks.

The use of the technique ETIOLATION, is an excellent tool for rapid elongation and rooting of shoots in vitro of Eucalyptus, this combined with the use of activated carbon prevents oxidation of of the majority of shoots in early stages (post-multiplication)

Results

Environmental conditions: Temperature 22±2°C, Light 1590 lux, 44% RH Photoperiod 16 light / dark hours. ETIOLATION only elongation and rooting. Activated Charcoal (AC), Panthenolic Acid (PA) y Casein Hydrolysates (CH)

Figure 2. a) Multiplication of shoots to 8 weeks, b) Elongation of shoots under conditions etiolation c) Rooting of shoots under conditions etiolation (Root > 10 cm) d) Complete and healthy vitroplants obtained by direct organogenesis

Conclusion

Through direct organogenesis is possible to obtain complete and healthy plants of plus tree of a Eucalyptus urophylla hybrid previously selected. This represents an excellent option to incorporate tolerance or resistance to Gonipterus scutellatus in the operational programs of breeding of Eucalyptus of INFOR and CMPC.

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