**INTRODUCTION**

Peroxidases are enzymes implicated in many physiological processes in the plants' life cycle, including rooting. Diverse researches have highlighted the importance of changes occurred in the peroxidase activity during the successive phases of the rooting process. However, these enzymes play another important role in rooting, since their activity in cuttings can be used as biochemical marker to determine their ability to form roots. This would allow the selection of plants easy-to-root as plant material for vegetative propagation. Stem cutting is the main propagation method for members of the Proteaceae family, but many of them root with difficulty, especially the Protea genus, in which the cuttings may take 5-6 months to root.

**MATERIAL AND METHODS**

Enzyme and specific activities have been measured in 4 different conditions of the cuttings (apical bud, leaf, base of the cutting and bark from the middle zone of the cutting) from species and cultivars of Leucospermum (L. cordifolium, L. patersonii, L. 'California Sunshine', L. 'Flame Spike', L. 'Succession 2', L. 'Vlam') and Protea (P. magnifica, P. obtusifolia, P. 'Cardinal', P. 'Pink Ice', P. 'Susara' y P. 'Sylvia') genera. Measurements were made by spectrophotometry using guaiacol and o-dianisidine as substrates. Protein concentrations were determined by Bradford assay (Bradford, 1976) using globulin as standard.

**RESULTS**

**PROTEA**

Enzyme activity (EA)

- Higher EA (Guaiacol)
  - P. 'Cardinal', P. obtusifolia, P. 'Pink Ice', P. 'Sylvia', P. 'Susara'
  - P. magnifica
- Higher EA (O-dianisidine)
  - P. obtusifolia, P. 'Pink Ice', P. 'Cardinal', P. 'Susara', P. 'Sylvia'
  - P. magnifica

Specific activity (SA)

- Higher EA (Guaiacol)
  - P. 'Pink Ice', P. 'Cardinal', P. obtusifolia, P. 'Sylvia', P. magnifica
  - P. 'Susara'
- Higher EA (O-dianisidine)
  - P. obtusifolia, P. 'Pink Ice', P. 'Cardinal', P. 'Sylvia', P. magnifica
  - P. 'Susara'

**LEUCOSPERMUM**

**ADDITIONAL ASSAYS**

1. Increase in oxidizing substrate concentrations (H₂O₂): 2.0 µL-6.0 µL
2. Increase in the amount of enzyme extract up to 300 µL

**CONCLUSIONS**

Measures obtained with both substrates confirmed the existence of a relation between the peroxidase activity and the ability of cuttings to root. Species and cultivars of the difficult-to-root Protea genus showed high peroxidase activity whereas the species and cultivars of the easy-to-root Leucospermum genus showed a nil enzymatic activity.