

Air Layering: An Ancient Vegetative Propagation Technique with a Modern Application for the Conservation of a Genetically Diverse Germplasm Collection of *Coffea* Species and Complex Hybrids*

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SUMMARY

One of the largest and most diverse coffee germplasm bank in the world is located in the Centro de Café of Instituto Agronômico de Campinas, Brazil, where its conservation and active utilization is the foundation of a solid and successful breeding program supporting the leading coffee production country in the world. Maintenance and rejuvenation of the germplasm collection is a defying task, provide the large number, the genetic diversity of accessions and also, the differences in age and growing conditions of each entry.

Air layering of orthotropic branches of plants growing in an irrigated and shaded lathhouse or in full sun fields without irrigation was attempted during one year by a single unexperienced worker. This has yielded 201 clones of 140 endangered accessions, comprising genetic, chromosomal and somatic mutants, F₁ and complex intra and interspecific hybrids and other representatives of the germplasm bank involving 10 genera of *Coffea*, one of the close related *Psilanthus* and one of the far related *Tricalisia*. The results are clear evidences of the easiness, efficiency and broad applicability of this ancient and inexpensive technique of vegetative propagation of plants to the noble use for conserving and preserving the integrity of the genetic variability of *Coffea* and related genera. Details, problems, advantages over alternative vegetative methods of propagation and further needed research are discussed.