

Juvenility in micropropagated plantlets versus rooted cuttings of maqui (*Aristotelia chilensis*)

Hermine Vogel, Benita González, Valeria Muñoz, Mariana Moya and Ursula Doll

Universidad de Talca, Chile

The antioxidant “superfruit” maqui (*Aristotelia chilensis*) is coming from a woody plant native to Chile and West-Patagonian areas of Argentina. It is a sacred medicinal plant of the indigenous Mapuche people. Up to now the rising international demand for maqui-berries is coming from wild collection. To provide in the future high quality and sustainable raw material for processing industry our research group has selected high-yielding genotypes that are propagated vegetatively, exploring also micropropagation techniques. As in some other woody plants micropropagation promotes juvenility expressed by a delay in fruit production. The objective of the present study was to compare young plantlets of the same age coming from in vitro propagation and rooted cuttings. In half of the plants the apical sprout was removed. Six clones were established in April 2017 (autumn) in field trials in an experimental design with four treatments and five replicates. During the following spring (December 2017) one of the genotypes ('Luna Nueva') produced fruit in all treatments, in three others ('Perla Negra', '304', and '319') only the rooted cuttings bloomed, and two of the genotypes ('218' and '622') produced flowers just in the following year (October 2018), when all studied genotypes and all plants had overpassed juvenility.

Initiation of flowering and fruit production of six selected genotypes of *Aristotelia chilensis* coming from micropropagation or rooted cuttings

Propagation method	Initiation of fruit production by genotypes (season)					
	Luna Nueva	Perla Negra	304	319	218	622
Rooted cuttings	1 st	1 st	1 st	1 st	2 nd	2 nd
Micropropagation	1 st	2 nd	2 nd	2 nd	2 nd	2 nd

Recent Publications

- Vogel H, González B, Catenacci G, Doll U (2016) Domestication and sustainable production of wild crafted plants with special reference to the Chilean Maqui Berry (*Aristotelia chilensis*). Julius-Kühn-Archiv 453:50-52.
- Doll U, Mosqueira D, Mosqueira J, González B, Vogel H (2016) Pruning maqui (*Aristotelia chilensis*) to optimize fruit production. JARMAP 6:10-14.
- Salgado P, Prinz K, Finkeldey R, Ramírez C, Vogel H (2017) Genetic variability of *Aristotelia chilensis* (“maqui”) based on AFLP and chloroplast microsatellite markers. Genetic Resources and Crop Evolution 64:2083–2091.
- Brauch JE, Reuter L, Conrad J, Vogel H, Schweiggert RM, Carle R (2017) Characterization of diglycosylated anthocyanins in two Chilean maqui berry clones by HPLC–DAD–ESI/MSn and 2D–NMR-spectroscopy. J Food Composition and Analysis 58:16-22.
- Moya M, González B, Doll U, Yuri JA, Vogel H (2019) Different covers affect growth and development of three maqui clones (*Aristotelia chilensis* [Molina] Stuntz). Journal of Berry Research DOI: 10.3233/JBR-180377.

Biography

Hermine Vogel is an Agronomist (Dipl. Ing. agr., 1987; Dr. agr. 1991) from TU München-Weihenstephan (1991). Since 1992 she is a professor at Universidad de Talca, Chile, and dean of the Faculty of Agronomic Sciences (2017). Her research is focused on plant breeding, domestication, medicinal and aromatic plants. In 2006 she obtained the Innovation Award for Women in Agronomy of the Fundación para la Innovación Agraria, Ministerio de Agricultura of the Chilean Government. In the last decade she initiated the domestication process of the Chilean Maqui-Berry, developing three female and three male varieties of *Aristotelia chilensis* as a genetic material for commercial cultivation of the species. Other research projects involved the Chilean species Boldo (*Peumus boldus*), Matico (*Buddleja globosa*), Bailahuén (*Haplopappus* sp.), and epiphytic orchids (*Chloraea* sp.) native to central Chile. She is the main author of two books and more than 25 indexed publications.

hvogel@utalca.cl

Notes: