



**BOSQUES
NATURALES**

Shoot Regeneration in *Élite* Genotypes of *Prunus avium* L. for Wood Production: Recent Developments at Bosques Naturales SA

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Bosques Naturales SA is the leading company for noble wood production in Spain, mostly from *P. avium* and hybrid *Juglans*. Over 64,000 cherry trees are currently planted for this purpose in two different locations, providing an excellent material to identify individuals excelling in desirable characteristics (plus trees). Some of the most promising genotypes are now being tested by us for mass propagation through in vitro culture, as part of the company's biotechnological agenda to increase current yields and improve the overall quality of its material

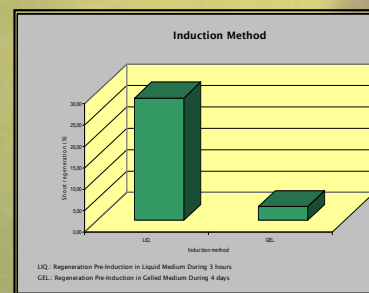
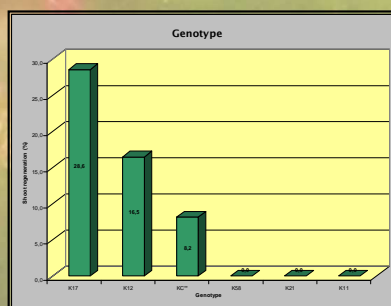
The protocol had 2 main steps: induction in the dark and expression under light conditions. Shoots were considered regenerated if they had, at least, two leaves raising from a stem.



Pre-Induction in the Dark

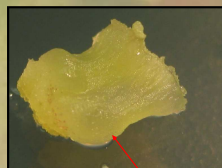


Expression Under Light Conditions



Induction in liquid medium was better than gelled one: immersion during 3 h in a culture medium supplemented with TDZ, NAA and 2, 4-D was the best treatment for shoot regeneration

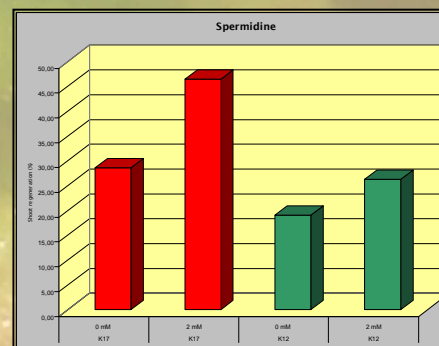
Only one shoot is regenerated per explant. The shoots were detached from the explants weekly. Better results were obtained when an organogenic cluster and not a single shoot was selected



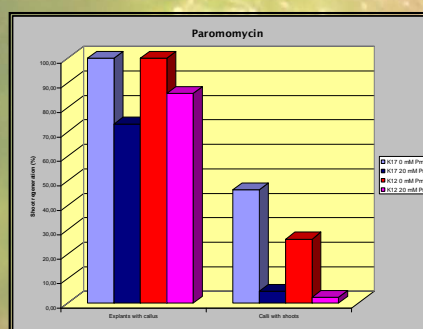
Organogenic Cluster

Internodal segment

The addition of Spermidine to the expression culture medium improve regeneration and the shoot quality



Paromomycin (20 mM) affected calli formation and shoot regeneration in K12 and K17 genotypes



Regenerated shoots were able to multiply in a QL (1977) medium, supplemented with Phloroglucinol, Adenine, BAP and IBA



Photography:

Feeney, M.; Bhagwat, B.; Mitchell, J. S. and Lane, W. D. 2007. Shoot regeneration from organogenic callus of sweet cherry (*Prunus avium* L.). Plant Cell, Tissue and Organ Culture. 90: 201-214.
Neuman, K. H. 2000. Some Studies on Somatic Embryogenesis, a Tool in Plant Biotechnology. 87th Indian Science Congress.
Petri, C. 2005. Transformación del albaricoquero (*Prunus armeniaca* L.), mediada por *Agrobacterium*, y regeneración de plantas transformadas. Tesis Doctoral. Dpto. de Biología Vegetal, Universidad de Murcia, pp 194.
Pérez-Tornero, O.; Egea, J.; Vanoostende, A.; and Burgos, L. 2000. Assessment of Factors Affecting Adventitious Shoot Regeneration from In Vitro Cultured Leaves of Apricot. Plant Science. 158: 61-70.

These results could be useful for clonal propagation of *élite* genotypes and open a way for the improvement of sweet cherry through genetic engineering