

Grafting for Managing Soilborne Diseases

Dr. Scot Nelson

Plant grafting is a highly successful organic method used for the management of root pests of tree species worldwide. Pathogen-susceptible tree varieties are grafted onto the rootstocks of related plant species that possess resistance to or tolerance of important plant diseases.

Two research projects underway on the Big Island examine the potential of grafting to manage coffee nematode decline caused by the root-knot nematode *Meloidogyne konaensis* and koa wilt caused by the soilborne fungus *Fusarium oxysporum* f. sp. *koa*. These are the two most important and deadly diseases of *Coffea arabica* and *Acacia koa* in Hawaii.

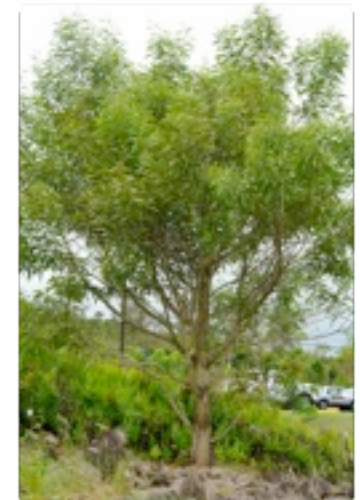
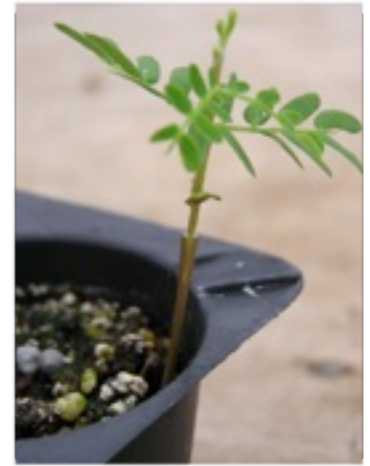
A number of coffee species are being tested in Kona to determine if they can be used as rootstocks. Plant growth and performance, coffee yield and taste are being used to evaluate their potential. Preliminary data have identified at least one promising species. The link below outlines the rootstocks included in the trial and presents the first year of data.

[New rootstocks for Kona coffee](#), a PowerPoint presentation by Scot C. Nelson, Marc Meisner and Virginia Easton Smith.

An *Acacia* has been successfully grafted for the first time. *Acacia koa* was grafted onto very young seedlings of *Acacia mangium* and *Acacia confusa*. The rootstocks are expected to be resistant to koa wilt and allow *Acacia koa* trees to grow on lands where the pathogen is established. The research article can be accessed using the link below

Nelson, S. C., 2006. [Grafting of *Acacia koa* Gray onto young seedlings](#). Native Plants Journal 7 (2):137-140.

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The world's first grafted Acacia koa scion growing on an Acacia mangium rootstock in Hilo, Hawaii.



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