



**Figure 1.** Two-year-old transplant in a Davis landscape: 'Blue Jay' rhododendron grafted onto western rhododendron rootstock.

## Rootstocks for “Difficult” Plants: Rhododendrons, Azaleas and Grevilleas

*Michael S. Reid and Ellen M. Zagory*

Following our success in using a serpentine ecotype of the western rhododendron (*Rhododendron occidentale*) as a rootstock to produce grafted plants of commercial rhododendrons and azaleas, we are continuing to produce and plant grafted plants in the landscape to observe their behavior under high pH conditions (Figure 1). Concurrently, we are examining the possibility of using *Grevillea robusta* (silky oak) as a tolerant rootstock for introducing a range of showy hybrid grevilleas to California gardeners.

### **Progress to date**

Horticulturists in areas with high pH soils or water have long been frustrated by their inability to grow many beautiful shrubs and trees that are native to acid soils and intolerant of high pH conditions. Such plants include the proteas, grevilleas, camellias, ericas, and, perhaps most notably, the rhododendrons and azaleas. The Slosson Foundation funded our proposal to test a different approach to developing high pH-tolerant rhododendrons. We suggested an ecotype of the western rhododendron (*R. occidentale*) that had been collected by Professor A. Leiser from a serpentine soil location, and that was performing very well in a

Davis garden, might be a suitable rootstock. In our preliminary studies, we were primarily concerned with developing strategies for propagating these materials, and were very pleased to find that we were able to obtain rooted cuttings. We also had moderate success in producing grafted plants using a “mini-plant” or “stenting” procedure.

In the past year, we have been examining the criteria required to improve success with the rhododendron grafting. Time of year, environmental conditions for the scion mother plants, and medium composition are all being examined as factors that might allow us to increase our percentage success with these grafts. In addition, we are starting to test the adaptability of some new species of *Rhododendron* obtained from calcareous locations in China, in anticipation that they furnish additional high pH-resistant rootstocks for rhododendrons and azaleas.

Initial efforts to graft showy *Grevillea* species and hybrids to *G. robusta* were only somewhat encouraging. Graft unions formed readily, but the rootstock did not root under the experimental conditions used. We are now testing the possibility of grafting onto seedling *G. robusta* plants (Figure 2), and also of using an aeroponic system (the EGS or Ein Gedi System) as a tool for rooting *G. robusta*. We have had success rooting a range of other adaptable species of *Grevillea*, and we will test some of these as potential alternative rootstocks. Within a year we anticipate achieving successful *Grevillea* grafts, at least on the seedling *G. robusta* plants.

*Michael S. Reid is Professor, Department of Environmental Horticulture, UC Davis; and Ellen M. Zagory is Collections Development Manager, Davis Arboretum, UC Davis.*



**Figure 2.** Nine-month-old *Grevillea robusta* seedling.