

# Natural Regeneration of *Rhododendron decorum* Franch.

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**Introduction:** *Rhododendron decorum* Franch is an ornamental shrub or small tree with delicate white flowers (Fig. 1, 3). It naturally occurs in the western Guizhou, southwestern Sichuan, southeastern Xi-zang, and Yunnan in China and mainly grows at altitudes of 1,000 ~ 3,300 m with abundant moisture and mild/cold winter. Three subspecies have been documented (Wu et al., 2005). In our landscapes, all three subspecies and many cultivars, especially hybrids, are occasionally planted. The limitation of its popularity may be its regeneration difficulty. Based on the exploration of Baili Rhododendron forests in Guizhou, China, we had investigated natural regeneration of *Rh. decorum*. The information will help us to better domesticate and breed this plant for our landscapes.



Fig. 1: Dabai Rhodo.

**Natural Conditions and Survey Methods:** In One Hundred Miles of Rhododendron Forest, dabai rhodo (*Rhododendron decorum* Franch.) community is endangered because of human's disturbance. In 70s of the last century, farmer cut majority of mother plants of dabai rhodo for tea plantation. Only small communities on the tops of hills were left. To better understand its wild populations, four 20 x 20 m<sup>2</sup> surveying plots were investigated to determine natural regeneration ability of dabai rhodo.

Tab. 1: Survey results of *Rh. decorum* population.

Diameter (cm)	Number of plants				Height (cm)
	Lot 1	2	3	4	
< 1	21	13	17	13	9-80
1-2	10	7	1	1	32-110
2-3	0	1	2	1	60-100
3-5	0	0	0	0	n/a
5-10	0	0	1	0	130
>10	0	4	6	1	350-450

**Significance:** Natural diversity of *Rh. decorum* flower color, size, and floral structure are phenomena. Some natural hybrids (with *Rh. delavayi*) were collected in the wild (Zha et al., 2008). Many other natural hybridizations among the species may yield some new plants. Future collaboration on management of these precious sites are needed, especially improving its natural regeneration ability.

**Results and Discussion:** The results indicated that natural regeneration was in much better progress in the last three years. Among 107 small trees and shrubs in all four plots, 99 (93%) of them were *Rh. decorum*. Seedlings with diameter at the ground level of 0.11-1.0cm accounted for 64 plants or 65% of total number of dabai rhodo. Eleven plants were fully established mother trees, with diameters of 10 cm or bigger, and the biggest one reached 25 cm in diameter at its ground level. However, for the diameter of 3-10cm, only one plant (5.1cm) left (Table 1). Canopy of *Rh. decorum* community could be distinguished into two layers. Eleven old plants were more than two meters in height, while seedlings and small plants were around one meters tall. Obviously, dabai community structures were not rational for its natural regeneration. Proper management, such as thinning of some seedling and canopy areas, should improve growth and establishment of the new generations. *Rh. decorum* is a popular landscape plant and collection of wild plants for commercial uses should be restricted.

## Literature Cited:

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Zha, H.G., R.I. Milne, and H. Sun. 2008. Morphological and molecular evidence of natural hybridization between two distantly related *Rhododendron* species from the Sino-Himalaya. *Botanical Journal of the Linnean Society* 156:119-129.

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Baili Rhododendron Forest region is a natural treasure of *Rhododendron*. It nourishes more than 18 species and many natural hybrids. Any suggestions, comments, and potential collaboration work are welcome. [chenxunke1956@163.com](mailto:chenxunke1956@163.com)



Fig. 2: Flower of *Rh. decorum*.



Fig. 3: *Rhododendron decorum* community.