



Phenotypic variation and diversity of *Magnolia sprengeri* Pamp. in native habitat

M. Yang, S.G. Shi, W. Liu, M. Zhang, L. Gou, Y.X. Kang and J.J. Liu

Northwest A&F University, Yangling, Shaanxi, China

Corresponding author: J.J. Liu
E-mail: ljj@nwsuaf.edu.cn

Genet. Mol. Res. 14 (2): 6495-6508 (2015)
Received February 10, 2015
Accepted May 29, 2015
Published June 12, 2015
DOI <http://dx.doi.org/10.4238/2015.June.12.2>

ABSTRACT. The population of *Magnolia sprengeri* individuals deceased drastically in the late 20th century because of the widespread harvest for traditional Chinese medicinal recipes. In this study, the levels of phenotypic variation and the genetic structure of 2 populations of *M. sprengeri* were estimated. The phenotypic variation of *M. sprengeri* characteristics was nonsynchronous, with a coefficient of variation for 37 characters from 9.55-35.87%. The variance stabilizing transformation value ranged from 0.034-52.344%. The variation contribution within the population was greater than the contribution among the population; the among-population rate was 2.864%, while the within-population rate was 15.849%; values of repeatability for among-population and within-population were 0.430 and 0.098, respectively. This indicates that more variation arose from within-population and that population repeatability was much greater than individual repeatability. Variation in the flower organ was greater than that in the leaf organ; this means that vegetative variation was more stable than reproductive variation. Variation in the southern population was greater than that in the northern population.

Key words: *Magnolia sprengeri* Pamp.; Population repeatability; Native habitat; Phenotypic diversity; Phenotypic variation