

The Seeds Characteristics of Artificial Populations of Yellowhorn (*Xanthoceras sorbifolium*) in China

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Xanthoceras sorbifolia Bunge, the sole species in the genus *Xanthoceras*, is a flowering plant in the family Sapindaceae. It is an important tree species being a source of edible oil and biodiesel with a capacity as a pioneer of degraded and desert land. Seeds of *X. sorbifolia* were collected from two plantations and two superior trees in Inner Mongolia; and one plantation and one superior tree in Liaoning, China. An inter simple sequence repeat (ISSR) analysis showed genetic variation among four artificial populations in China: two in Inner Mongolia (IM), one in Liaoning (LN), and one in Shandong (SD). The average percentage of polymorphic loci was 81.25 % for these four populations. Based on an analysis of molecular variance, 23 % of the total genetic variation was found among populations, and 77 % within populations. Traits of seeds varied considerably between and among areas, for example two trees produced quite different seeds in several traits although they are adjacent to each other in the same farm. As much attention has not been paid to the traits of seeds, there should be a genetic test to understand this variation. It is necessary to obtain information on seed characteristics first and then provide basic information for further research on the selection of superior trees and provenances.

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