

Seed dormancy in seven-son flower (*Heptacodium miconiodes*)[©]

R.L. Geneve^a and S.T. Kester

University of Kentucky, Department of Horticulture, Lexington, Kentucky 40546, USA.

INTRODUCTION

Seven-son flower (*Heptacodium miconiodes*) has recently become an established nursery crop in North America. It is the only member in the genus and is considered an endangered species endemic to China (Jin and Li, 2007). Seven-son flower is routinely propagated by softwood cuttings (Lee and Bilderback, 1990). However, there is little information on seed propagation.

Seven-son flower is in the *Caprifoliaceae* and seeds (achenes) have a small underdeveloped embryo. Most members in the *Caprifoliaceae* produce seeds with morphophysiological dormancy. Once seeds with morphophysiological dormancy have been dispersed, they must experience embryo growth within the seed prior to germination. There are at least eight different types of morphophysiological dormancy described based on the single or multiple cycles of warm or cold stratification required to satisfy dormancy (Baskin and Baskin, 2004). The specific type of morphophysiological dormancy in seven-son flower has recently been shown to be nondeep simple morphophysiological dormancy (Geneve and Kester, 2018).

RESULTS AND DISCUSSION

Seven-son flower has seeds with an underdeveloped embryo at the time of fruit dispersal with an embryo that occupies approximately 12% of the seed length. The fastest germination was observed following 8-weeks of cold stratification (5°C) followed by 8-weeks warm germination conditions (20°C). The embryo only enlarged during the warm period. Final germination percentage was approximately 85% (Table 1). Previous recommendations for seed pretreatments to relieve seed dormancy in seven-son flower included 5-months warm stratification followed by 3-months cold stratification (Dirr and Heuser, 2006). It appears that the initial warm stratification period is not required as seeds germinated well after a cold followed by warm dormancy release strategy. It is recommended that seven-son flower seeds be cold stratified for 2 to 3 months followed by germination under warm conditions (at least 20°C). Germination in these seeds was complete approximately 16 weeks after moving seeds to warm conditions (Table 1).

Table 1. Germination in seven-son (*Heptacodium miconiodes*) flower seeds exposed to warm (20°C) and cold (5°C) stratification prior to germination at 20°C.

Dormancy release treatment	Germination (%)	Days to complete germination after sowing
8-weeks warm	87.5	34 weeks
8-weeks cold	84.6	24 weeks
8-weeks warm followed by 8-weeks cold	75.0	36 weeks

Literature cited

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^aE-mail: rgeneve@uky.edu

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