

OVERVIEW OF SEED DORMANCY IN *VIBURNUM* (CAPRIFOLIACEAE)

Carol Caudle Baskin^{1,2*}, Shun-Ying Chen³, Ching-Te Chien⁴, and Jerry Mack Baskin¹

¹Department of Biology, University of Kentucky, Lexington, Kentucky, 40506, USA,

*Fax: + 1 859 257 1717, *E-mail: ccbask0@uky.edu

²Department of Plant and Soil Sciences, University of Kentucky, Lexington, Kentucky 40546, USA

³Division of Forest Biology, Taiwan Forestry Research Institute, Taipei, Taiwan,

⁴Division of Silviculture, Taiwan Forestry Research Institute, Taipei, Taiwan

REFERENCES

- BARTON L. V. (1933). Seedling production of tree peony. Contributions from Boyce Thompson Institute, 5: 451-460.
- BARTON L. V. (1958). Germination and seedling production of species of *Viburnum*. Proceedings of the Plant Propagators' Society, 8: 126-134.
- BASKIN J. M., BASKIN C. C. (1983). Germination ecophysiology of eastern deciduous forest herbs: *Hydrophyllum macrophyllum*. The American Midland Naturalist, 109: 63-71.
- BASKIN J. M., BASKIN C. C. (1986). Seed germination ecophysiology of the woodland herb *Asarum canadense*. The American Midland Naturalist, 116: 132-139.
- BASKIN J. M., BASKIN C. C. (1989). Seed germination ecophysiology of *Jeffersonia diphylla*, a perennial herb of mesic deciduous forests. American Journal of Botany, 76: 1073-1080.
- BASKIN J. M., BASKIN C. C. (1990). Germination ecophysiology of seeds of the winter annual *Chaerophyllum tainturieri*: a new type of morphophysiological dormancy. Journal of Ecology, 78: 993-1004.
- BASKIN C. C., BASKIN J. M. (1998). Seeds: ecology, biogeography, and evolution of dormancy and germination. Academic Press, San Diego, CA, 666 pp.
- BASKIN C. C. BASKIN J. M. (2003). When breaking seed dormancy is a problem try a move-along experiment. Native Plants Journal, 4: 17-21.
- BASKIN J. M., BASKIN C. C. (2004). A classification system for seed dormancy. Seed Science Research, 14: 1-16.
- BASKIN J. M., BASKIN C. C. (2008). Some considerations for adoption of Nikolaeva's formula system into seed dormancy classification. Seed Science Research, 18: 131-137.
- BASKIN C. C., BASKIN J. M., YOSHINAGA A., THOMPSON K. (2005). Germination of drupelets in multi-seeded drupes of the shrub *Leptocophylla tameiameiae* (Ericaceae) from Hawaii: a case for deep physiological dormancy broken by high temperatures. Seed Science Research 15: 349-356.
- BASKIN C. C., CHIEN C.-T., CHEN S.-Y., BASKIN J. M. (2008). Germination of *Viburnum odoratissimum* seeds: a new level of morphophysiological dormancy. Seed Science Research, 18: 179-184.
- BONNER F. T., GILL J. D., POGGE F. L. (2008). *Viburnum* L. In: Bonner F. T., Karrfalt R. P. (Eds.). The woody plant seed manual. United States Department of Agriculture, Forest Service, Agriculture Handbook 727: 1162-1167.
- COATS A. M. (1992). Garden shrubs and their histories. Simon and Schuster, New York, NY, 223 pp.
- CULLINA W. (2000). Guide to growing and propagating wildflowers of the United States and Canada. Houghton Mifflin Company, Boston, MA, 322 pp.
- CULLINA W. (2002). Native trees, shrubs, and vines. A guide to using, growing, and propagating North American woody plants. Houghton Mifflin Company, Boston, MA, 354 pp.
- DIRR M. A. (1975). Manual of woody landscape plants: their identification, ornamental characters, culture, propagation and uses. Stipes Publishing Company, Champaign, IL, 552 pp.
- DONOGHUE M. J., BALDWIN B. G., LI J., WINKWORTH R. C. (2004). *Viburnum* phylogeny based on chloroplast *trnK* intron and nuclear ribosomal ITS DNA sequences. Systematic Botany, 29: 188-198.
- FERGUSON I. K. (1966). The genera of Caprifoliaceae in the southeastern United States. Journal of the Arnold Arboretum, 47: 33-59.
- FLOYD J. A. JR., MORRIS G., JOHNSON N. K., TRIGG L., MAYNOR B., CHAPLIN V. (1980). Southern Living gardening. Trees & shrubs, ground covers-vines. Oxmoor House, Birmingham, AL, 260 pp.
- GIERSBACH J. (1937). Germination and seedling production of species of *Viburnum*. Contributions from Boyce Thompson Institute, 9: 79-90.
- HIDAYATI S. N., BASKIN J. M., BASKIN C. C. (2005). Epicotyl dormancy in *Viburnum acerifolium* (Caprifoliaceae). The American Midland Naturalist, 153: 232-244.
- KARLSSON L. M., HIDAYATI S. N., WALCK J. L., MILBERG P. (2005). Complex combination of seed dormancy and seedling development determine emergence of *Viburnum tinus* (Caprifoliaceae). Annals of Botany, 95: 323-330.
- MABBERLEY D. J. (1997). The plant-book. A portable dictionary of the vascular plants (2nd edition). Cambridge University Press, Cambridge, UK, 858 pp.

- MARTIN A. C. (1946). The comparative internal morphology of seeds. *The American Midland Naturalist*, 36: 513-660.
- MOORE-GOUGH C., GOUGH R. E. (2006). Growing trees and shrubs from seed. Montana State University Extension. MontGuide. MT 199604. Horticulture. A-11 (Ornamentals), Bozeman, MT, 4 pp.
- NIKOLAIEVA M. G. (1969). Physiology of deep dormancy in seeds. Izdatel'stvo "Nauka," Leningrad, Russia (Translated from Russian by Z. Shapiro, NSF, Washington, DC), 219 pp.
- NIKOLAIEVA M. G. (1977). Factors controlling the seed dormancy pattern. *In*: Khan A. A. (Ed.). The physiology and biochemistry of seed dormancy and germination. North-Holland, Amsterdam, The Netherlands: 54-74.
- NUMATA M., ASANO S. (1970). Sympetalae-2. Biological flora of Japan. Volume 2. Tsukiji Shokan Publishing Company, Ltd. Tokyo, Japan, 175 pp.
- PHILLIPS H. R. (1985). Growing and propagating wild flowers. The University of North Carolina Press, Chapel Hill, NC, 331 pp.
- PLANTS FOR A FUTURE. Database. *Viburnum setigerum*. http://www.ibiblio.org/pfaf/cgi-bin/arr_html?Viburnum+setigerum&CAN=LATIND
- VINES R. A. (1960). Trees, shrubs and woody vines of the Southwest. University of Texas Press, Austin, TX, 1104 pp.
- WATSON L., DALLWITZ M. J. (1992 onwards). The families of flowering plants: descriptions, illustrations, identification, and information retrieval. Version: 14th December 2000. <http://biodiversity.uno.edu/delta>
- WINKWORTH R. C., DONOGHUE M. J. (2004). *Viburnum* phylogeny: evidence from the duplicated nuclear gene *GBSSI*. *Molecular Phylogenetics and Evolution*, 33: 109-126.
- WINKWORTH R. C., DONOGHUE M. J. (2005). *Viburnum* phylogeny based on combined molecular data: implications for taxonomy and biogeography. *American Journal of Botany*, 92: 653-666.
- YOUNG J. A., YOUNG C. G. (1992). Seeds of woody plants in North America. Revised and enlarged edition. Dioscorides Press, Portland, OR, 407 pp.