

**Optimal Management and Productivity of *Eucalyptus grandis* on Former Phosphate Mined and Citrus Lands in Central And Southern Florida: Influence of Genetics and Spacing**

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(Presented by Matt Langholtz)

Eucalyptus short rotation woody crops (SRWC) with superior genotypes are promising in central and south Florida due to their fast growth, freeze resilience, coppicing ability, and site tolerance. Four *E. grandis* cultivars, E.nergy™ G1, G2, G3, and/or G5, were established in 2009 at varying planting densities on a clay settling area (CSA) in phosphate mined land in central Florida and a bedded former citrus site in southern Florida. Planting densities were 1025, 2050, and 3416 trees/acre on the CSA, and 581, 869, 1162, 1452, and 1742 trees/acre on the citrus site. Modified land expectation values (LEV) for coppicing species are reported for G2, G3, and/or G5 SRWCs on CSAs and citrus sites. Optimal coppice stage and cycle lengths to the nearest 1/10th year were estimated for each cultivar × spacing × site scenario, assuming a range of coppice yields, cultural treatments (weed control and fertilization), plantation establishment and maintenance costs, stumpage prices, and real discount rates of 6, 8, and 10%. For example, at a 10% discount rate, stumpage price of \$14/green ton, costs of \$250, 50, 974, 55, 90, and 10/acre for land preparation, bedding, planting, pre- and post-establishment weeding, fertilization, and annual management, respectively, and expected coppice yields, the LEV of G3 on CSAs at 1025 trees/acre was \$561/acre or an equal annual equivalent of ~\$56/acre/year. Currently, Eucalyptus is primarily harvested for landscape mulch, but markets are likely to expand into bioenergy and pulpwood applications.

KEYWORDS: Eucalyptus, short rotation woody crops, cultivar, spacing, land expectation values

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Dr. Donald Rockwood, Professor Emeritus at the School of Forest Resources and Conservation, University of Florida (<http://sfrc.ufl.edu/people/faculty/rockwood/>) and President of Florida FGT (<http://floridafgt.com/>), has over 35 years of experience in the development and use of Eucalyptus, cottonwood, pine, and cypress in Florida and elsewhere. He was responsible for the genetic improvement of several SRWC species, including the commercial release of five cultivars (<http://www.ffsp.net/varieties/eucalyptus/>) and the development of associated SRWC systems, and he continues to conduct research on SRWCs. Recent publications: Rockwood DL. 2012. History and status of Eucalyptus improvement in Florida. International Journal of Forest Research Volume 2012 (2012), Article ID 607879, 10 pages. <http://www.hindawi.com/journals/ijfr/2012/607879/>. Fabbro KW, and DL Rockwood. 2016. Optimal management and productivity of Eucalyptus grandis on former phosphate mined and citrus lands in central and southern Florida: Influence of genetics and spacing. In: Proceedings 18th. Biennial Southern Silvicultural Research Conference, March 2-5, 2015, Knoxville, TN. e-Gen. Tech. Rpt. SRS-212. p.510-517. [http://www.srs.fs.usda.gov/pubs/gtr/gtr\\_srs212.pdf](http://www.srs.fs.usda.gov/pubs/gtr/gtr_srs212.pdf).