

INTRODUCTION, EVALUATION, AND BREEDING OF NOVEL *POPULUS* FOR SUBTROPICAL CLIMATES

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Since 2008 the Forest Pathology Lab at the University of Florida has established and evaluated *Populus* germplasm with potential adaptation to subtropical climates such as Florida. We aimed to examine disease resistance, photoperiod response, growth rate, ease of propagation, adaptability to heat and lack of chilling. To this end, the focus has been to grow species from Mexico, naturally and allopatrically occurring within seven different biogeographic provinces in subtropical low-latitude locations (18°48’-30°34’ N), including *P. aff. fremontii* var. *mesetae* (Jalisco origin), *P. luziarum*, *P. primaveralepensis*, *P. mexicana*, *P. guzmanantlensis*, *P. monticola*, *P. simaroa*, *P. tremuloides* (Jalisco origin) and evergreen clones originating from the mutant form of Lombardy poplar, *P. nigra* ‘Chile’, first discovered over 100 years ago near Santiago, Chile as a sport mutation on *P. nigra* ‘Italica’. We carried out progeny trials (100 seedlings each) with *P. mexicana* ssp. *mexicana* using three open-pollinated families from near Monterrey, Mexico. Results from year one (from seed) suggested significant potential with this species, with mean height growth of > 4 m and very high disease and insect pest resistance. Seed propagation for *P. luziarum* and *P. primaveralepensis* was highly successful and although height growth for both species after six months was not significantly different, the means were 22.91 cm (\pm 2.19 cm) and 25.78 cm (\pm 3.45 cm), respectively. Early flowering was observed for the white poplar *P. luziarum*, with both male and female clones flowering within the first year from cuttings. Pollen was collected from *P. luziarum* and *P. monticola*, and crosses with *P. alba* were attempted, but so far no viable seed has been produced. This is the first report on our observations and early results suggest there is significant potential within these species for trait discovery, adaptation and future development within the genus for warmer climates.