

The Origination of a New *Chamaecyparis* Cultivar—‘Qiana’

D. Zhang^{*1}, J. Li², M.A. Dirr³, and S. Spongberg⁴, ¹Dept. of Horticulture, Univ. of Maine, Orono, ME 04469-5722; ²Arnold Arboretum of Harvard Univ., Jamaica Plain, MA 02130; ³Dept. of Horticulture, Univ. of Georgia, Athens, Georgia 30602; ⁴The Polly Hill Arboretum, P.O. Box 561, West Tisbury, MA 02575

A new *Chamaecyparis* cultivar, ‘Qiana’, was listed under the species of *Chamaecyparis thyoides* (L.) B.S.P. The examination of morphological characters such as the narrow-pyramidal habit, dense flattened branches, and glaucous bloom on foliage and cones questions its species affinity. In this study we inferred the genetic relatedness of this cultivar to the other species of *Chamaecyparis* based on amplified fragment length polymorphisms (AFLPs) and sequences of the internal transcribed spacers (ITS) of nuclear ribosomal DNA. AFLP analyses using three primer combinations generated a data set of 644 characters and show a close relationship of *C.* ‘Qiana’ and *C. lawsoniana*. Our ITS data also strongly support the affinity of *C.* ‘Qiana’ to *C. lawsoniana* (Murr.) Parl. (bootstrap support = 100% and 13 shared base substitutions) than to *C. thyoides*. *Chamaecyparis* ‘Qiana’ and *C. lawsoniana* are more closely related to Asian species, *C. obtusa* (S. Et Z.) Endl. and *C. pisifera* (S. Et Z.) Endl., than to eastern North American species *C. thyoides*. These results suggest that *C.* ‘Qiana’ is originated from *C. lawsoniana* and should be listed as *C. lawsoniana* ‘Qiana’.