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Czarnecki, D. M., Norcini, J. G., and Deng, Z. Native Plants Journal 8(1):45-57. 2007.

PHENOTYPIC DIVERSITY OF *Coreopsis leavenworthii*

TORR. & GRAY (ASTERACEAE)

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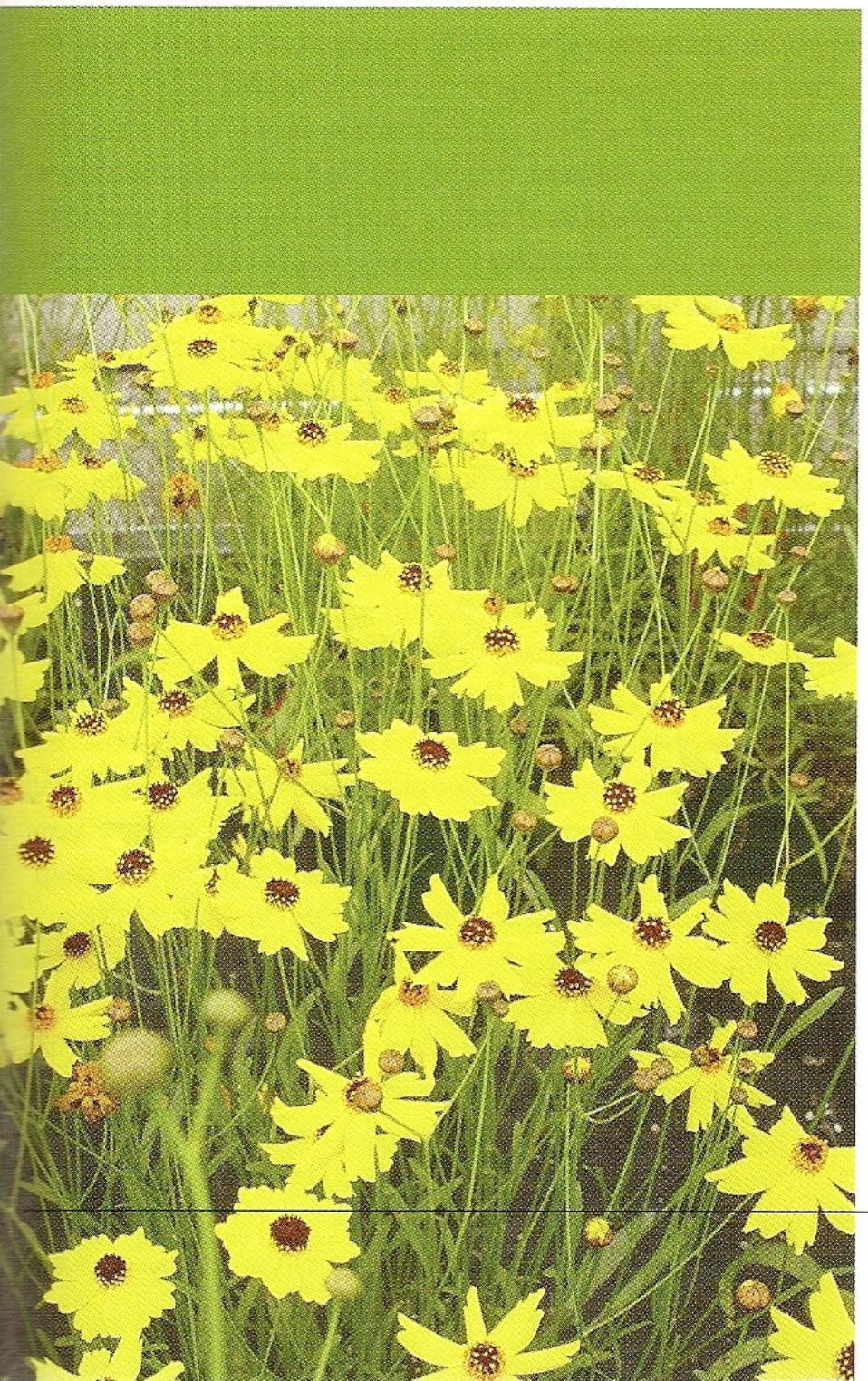

ABSTRACT

Coreopsis leavenworthii Torr. & Gray (Asteraceae), one of the Florida state wildflowers, is nearly endemic to and very ubiquitous in Florida. Interest in commercial seed or plant production of this species as well as use for highway beautification, native plant community restoration, and mine reclamation has been increasing in recent years. This study aimed to understand the level and geographic distribution of phenotypic diversity of this species, a critical step before engaging in large-scale commercial production of native plants. Plants derived from natural and commercial seed production populations exhibited a substantial amount of phenotypic diversity when grown in a common-garden study. North Florida natural populations typically had bipinnately compound leaves with dark-yellow ray flowers, while natural populations originating in central or south Florida had simpler, needle-like leaves, and light-yellow and dark-yellow ray flowers. Populations were grouped into 3 clusters in principal component analysis. Two natural populations from central Florida were dissimilar and grouped into separate clusters, indicating possible existence of genetic isolation in the species' distribution. Three production populations originating from the same native population in central Florida were phenotypically similar even though they had been grown under different climatic zones in Florida and represented different generations (G1, G2, or G4). This suggests that the genetic identity of the seed-source origin may be maintained under production practices even when plants are grown in locations distant from the seeds' origin. Despite the clustering of these populations, there seems to be no evidence that precludes the statewide use of most populations in this study.

Czarnecki DM II, Norcini JG, Deng Z. 2007. Phenotypic diversity of *Coreopsis leavenworthii* Torr. & Gray (Asteraceae). Native Plants Journal 8(1):45–57.

KEY WORDS

common-garden study, phenotypic variation, genetic diversity, population differentiation, wildflower

NOMENCLATURE

USDA NRCS (2006)