

POTENTIAL ALLELOCHEMICALS OF THE INVASIVE SPECIES *CARDUUS NUTANS* L. AND *C. ACANTHOIDES* L. S. O. Duke\*<sup>1</sup>, A. L. Cerdeira<sup>2</sup>, C. L. Cantrell<sup>1</sup>, F. M. Silva<sup>3</sup>, N. Corniani<sup>3</sup>, E. D. Velini<sup>3</sup>, M. A. Donega<sup>4</sup>; <sup>1</sup>USDA, ARS, Oxford, MS, <sup>2</sup>EMBRAPA, Jaguariuna, Brazil, <sup>3</sup>UNESP, Botucatu, Brazil, <sup>4</sup>Univ Sao Paulo, Piracicaba, Brazil (254)

### ABSTRACT

The thistles *Carduus nutans* L. and *C. acanthoides* L. have both been implicated as allelopathic species. These Eurasian native plants are invasive in the U.S. and other parts of the world, competing well with many native species. Bioassay-guided isolation of phytotoxins from shoots and roots of this plant revealed that a chemical found in the roots, aplotaxene (heptadeca-1,8,11,14-tetrane), to be the most likely candidate as an allelochemical. Contrary to the published work of others, we found that this compound to be moderately phytotoxic. It was also found in relatively large amounts in the roots of both *Carduus* species, and we found the compound to be exuded by the roots into the soil.