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ALLELOPATHY IN *ECHINACEA ANGUSTIFOLIA* D.C. ROOTS

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ABSTRACT

The purpose of this study was to examine the allelopathic effects of compounds of different molecular weights taken from *Echinacea angustifolia* D.C., the common purple coneflower. Roots were collected from ten plants from five geographic locations and from five fresh plants that were grown in the greenhouse. Water extracts were made from ground dried roots and crushed fresh roots. These extracts were then separated into a high and a low molecular weight fractions using a 10,000 dalton cut-off ultrafilter (Phenomenex, Torrence, CA). Lettuce seeds *(Lactuca sativa)* were germinated with the high molecular weight, low molecular weight, and a crude extract from each plant. After four days the seed germination was counted and the root lengths were measured. Analyses of variance of the data were made using the general linear model procedure (SAS Institute, Cary, NC). The crude and the low molecular weight extracts exhibited the most severe allelopatic effects. High molecular weight fractions did not cause a significant inhibition of lettuce seed germination. Partitioning of the active fractions with chloroform and methylene chloride are in progress to isolate the biologically active components.