



Tropentag, October 5-7, 2011, Bonn

“Development on the margin”

Allelopathic Effects of Aqueous Extract of Wild Pigweed on Germination, Emergence, Growth and Development of Savory

EBRAHIM BENYAS¹, AZRA SADAT KHATAMIAN², SAID ZEHTAB SALMASI³

¹Tabriz University, Agriculture,

²Tarbiat Modares University, Agriculture, Iran

³Tabriz University, Agriculture,

Abstract

This experiment is to evaluate the effect of allelopathic aqueous extract shoot, root and whole plant (concentration of 2 percent by weight - volume) Wild Pigweed (*Amaranthus retroflexus* L.) on savory (*Satureja hortensis* L.) germination, emergence percentage and plant morphological traits. Germination and greenhouse tests were carried out in a completely randomised design in Tabriz University in Iran during 2009. The analysis of variance showed a germination test that the effect of aqueous extract of different organs of Wild Pigweed on germination percentage and germination rate and normal buds percentage were significant ($p \leq 0.01$). Aqueous extract of roots, main plants and shoots of Wild Pigweed had slower germination rate in comparison with control. Roots, main plants and shoots treatments of Wild Pigweed strongly caused abnormal savory seedling. The experimental results of analysis of variance of greenhouse test showed that effect of aqueous extract of different organs of Wild Pigweed on percentage and emergence rate, plant height, leaf number per plant, dry weight of shoot and root were significant ($p \leq 0.01$). Emergence percentage was reduced strongly by roots, shoots and main plants extracts of Wild Pigweed. The highest reduction of plant height was related to shoots and main plants extracts and the lowest one was related to extracts of Wild Pigweed roots. The number of leaves per plant was reduced by whole aqueous extracts of weeds in which root extract had less reduction in comparison with the other two extracts. Shoots extracts and main plants was reduced strongly dry weight of roots and shoots and the least reduction was related to root extract.

Keywords: Allelopathic, Aqueous extract, Savory, Wild Pigweed