ALLELOPATHIC EFFECT OF AQUEOUS LEAF EXTRACT OF PARTHENIUM HYSTEROPHORUS L. ON SEED GERMINATION AND SEEDLING GROWTH OF DAUCUS CAROTA

Princee Gupta, Amisha Kem and Asha

Department of Botany, Meerut College, Meerut-250 001, (U.P.) INDIA

Abstract : Allelopathic effects of aqueous extract of *Parthenium hysterophorus* leaves were studied on seed germination and seedling growth of *Daucus carota*. The adverse impact of weed extracts on seed germination percentage, seedling growth (root and shoot lengths) with germination speed, growth index and tolerance index. Inhibitory effect of this weed extract on these parameters of test plant followed the order: control < 3% < 5% < 7% < 9%. The percentage of aqueous extract negatively correlated with the said parameters. The extract had variable effects (additive, antagonistic and synergistic) on the growth. However phytotoxicity percentage increased in treatment sets as compared to control.

Keywords: Allelopathic, Weed, Daucus carota, leaves extract

REFERENCES

Adkins, S.W. and Sowerby, M.S. (1996). Allelopathic potential of the weed *Parthenium hysterophorus* L. in Australia, Plant Protection Quarterly . 11: 20-23

Alam, S.M. (1991). Weed Science Problem in Pakistan . Pak. Gulf .Eco., 3-9 : 25-29

Archana, Y.; Chauhan, S.V.S. and Yadav, A. (1998). Studies on allelopathic L. effect of some weeds. *Journal of Phytological-Research*, 11: 15-18.

Batish, D.R.; Kohil, R.K.; Singh, H.P. and Saxena, D.B. (1997). Studies on herbicidal activity of parthenin , a constituent of *Parthenium hysterophorus* towards billgoat weed (*Ageratum conyzoides*). Current Science. 73: 369-371.

Burhan, N. and Shaukat, S.S. (1999). Allelopathic potential of *Argemon mexicana* L., a tropical weed. Pak. J. Biol. Sci., 2: 1269-1273.

Chou and Chung (1974). The Allelopathic potential of 15:14-27 *Miscanthus floridus*. Bot. Bull. Academia Sinica 15:14-27.

Evans, H.C. (1997). *Parthenium hysterophorus*: A review of its weed status and the possibilities for biological control. Biocontrol: News and Information. **18**(3): 89-98.

Haque, A.H.M.M., Akon, M.A.H., Islam, M.A.,Khalequzzamen ,K.M. and Ali, M.A.(2007).Study of seed health, germination and

seedling vigor of farmers produced rice seeds. International journal of sustainable crop production 2(5):34-39.

Hierro, J.L. and Callaway, R.M. (2003). Allelopathy and exotic plant invasion.Plant and Soil. 256: 29-39.

Kohil, K.K. and Rani, D. (1994). *Parthenium hysterophorus*-a review. Research Bulletine (Sci.) Punjab University. 44: 105-149.

Mall, L.P. and Dagar.J.C. (1979). Effect of *Parthenium hysterophorus* extract on germination and early seedling growth of three crops. Journal of Indian Botanical Society **58** (1), 40-43.

Mersie, W. and Singh, M. (1987). Allelopathic effect of *Parthenium hysterophorus* extract and residue on some agronomic crops and weeds. Journal of Chemical Ecology. 13: 1739-1747.

Oudhia, **P.** (1999). Allelopathic effects of *Lantana camara*. *Acta*. *Bot*. *Indica* **27** (1), 1003-5.

Rahman, A. and Acharia, S.S.,(1998). Allelopathic effect of *Parthenium hysterophorus* Linn. on seed gennination and seedling establishment of *Cassia occidentalis* Linn. *Advances in Plant Sciences*, 11: 151-153.

Swaminathan, C.; Rai, R.S. and Sureshi, K.K. (1990). Allelopathic effects of *Parthenium hysterophorus* L. on germination and seedling growth of a few multipurpose trees and arable crops. The international tree crops journal 143-150.