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Allelopathic Potentials of *Chrysanthemum boreale*

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To study allelopathic potentials of *Chrysanthemum boreale* (donor plant), aqueous extracts and volatile substances of the plant were used for the experiments. Seed germination of the receptor species were inhibited by the aqueous extracts of donor plant and these inhibitory effects were increased in proportional to the concentration of extracts. But, seedling elongation of the receptor species represented different results. One of the receptor species were inhibited by the aqueous extract increased, another species were slightly stimulated in lower concentration of the extract, and the others were stimulated by the extract increased. Dryweight growth was also proportionally inhibited by the aqueous extract increased, while some species was stimulated in lower concentration of the extract. Seed germination and dryweight growth of the receptor species were not inhibited by the volatile substances of donor plant. But, seedling elongation of some receptor species were inhibited by the volatile substance concentration increased. Effect of *C. boreale* on roots hair development of receptor species was tested and the result was inhibited along to the concentration of aqueous extracts and volatile substances. Anti-fungal effect of *C. boreale* on *Aspergillus nidulans*, *Fusarium oxysporum*, *Alternaria mali* was inhibitory along to the concentration of volatile substances increased. Anti-bacterial effect of *C. boreale* on *Staphylococcus aureus*, *Streptococcus pyogenes* and *Streptococcus mutans* tested for growth inhibition as increased to the concentration of volatile substances. While, growth of *Escherichia coli* was not inhibited to all the concentration of volatile substances. The above mentioned results were, therefore, confirmed that the natural substances from *C. boreale* had biologically toxic activities, that is, allelopathic potentials to the other plants and microorganisms.

Keywords: allelopathic potentials, *Chrysanthemum boreale*, aqueous extract, volatile substances, anti-microbial activity