

P.30 - Allelopathic effects of medicinal herbs extracts on the seedling of *Echinochloa crus-galli*

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Allelopathy is defined as the direct influence from a chemical released from one plant on the development and growth of another. Allelopathic substances, if present in crop varieties, may reduce the need for weed management, particularly herbicide use. Allelopathy alone may not be a perfect weed management technology but it may be a supplementary tool for weed control. This study was conducted in order to evaluate the potential for a natural herbicide and research of allelopathic effects on germination of *Echinochloa crus-galli*. We compared allelopathic effects of extracts from 10 medicinal herbs. Among ten species extracts, *Aster scaber* extracts was highly herbicidal. Especially, germination rate completely was inhibited by root exudates of *A. scaber*: Root > Leaf > Stem. The result of total phenolic compound from root exudates *A. scaber* was found to be the highest compound according to the phenolic analysis (1040mg/L). The amount of total phenolic compound on the extracts from the roots was shown as follows; *A. scaber* > *Saururus chinensis* > *Aster tataricus*, *Hosta plantaginea* > *Saxifraga stolonifera*. The increase of inhibition as shown by extracts leads to a larger amount of total phenolic compounds. The major compounds identified from *A. scaber* by HPLC were chlorogenic acid and caffeic acid.