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Allelopathic Effects of Some Annual and Perennial Weed Species on Germination and Seedling Growth of Soybean

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Abstract

The allelopathic effects of *Amaranthus retroflexus* L., *Setaria viridis* L., *Acroptilon repens* L., *Chenopodium album* L., *Cirsium arvense* L., *Cynodon dactylon* L., and *Convolvulus arvensis* L. in three allelopathic environments including shoots powder, roots powder, and rhizosphere soil of weeds, in three stages of vegetative, reproductive and maturity, on germination, lengths and weights of seedling, radicle and plumule of soybean (CV. Williams) was studied at the laboratory. For this purpose, a factorial experiment based on randomized complete block design with four replications was used. The results showed that the allelopathic materials of all weeds and all allelopathic environments had significant effects on all traits as compared to the control. But growth stage had only significant effect on germination percentage. *A. retroflexus* and *C. arvense* had the largest inhibitory effects on seedling growth, but, *C. arvensis* had largest inhibitory effects on germination percentage. Plumule growth was influenced more than radicle growth. Allelopathic factors at all growth stages of weeds had large amount of inhibitory effect on germination and seedling growth of soybean. The result of this study could be useful to recognize allelopathic effect of important weeds on decreasing germination and seedling growth of soybean.

Keywords : Allelopathic environment, Allelopathy, Growth stage, Soybean, Weed

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Chromolaena odorata

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Ophiopogon)

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Amaranthus) } =
 (*Setaria viridis*) (*retroflexus*
Chenopodium) (*Acroptilon repens*)
Cynodon) (*Cirsium arvense*) (*album*
 B {(*Convolvulus arvensis*) (*dactylon*
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/ b	/ b	/ b	/ b	/ b	/ b
/ b	/ b	/ b	/ b	/ b	/ b

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