

## **Investigation of castor bean (*Ricinus communis* L.) allelopathic potential on three weed**

Abstract:

Field observations suggested that castor bean (*Ricinus communis*) probably exerts some allelopathic effects. The main objective of this study was to determine whether *R. communis* affects on the germination and growth of some weeds by allelopathic material. To explore Allelopathic responses of *R. communis* upon germination and growth stages of pigweed (*Amaranthus retroflexus*), wild barley (*Hordeum leporinum*), noogroora burr (*Xanthium strumarium*L.) on laboratory bioassay and two greenhouse experiments- including, herb residue of *R. communis* effects and simultaneous growth of *R. communis* with weeds on target plants were conducted. The result showed that herb exerts of castor bean had significantly effect on percentage of germination, stemlet and rootlet length, and late of germination. Percentage germination decreased 70 percentage, but it had no effect on dry weight of rootlet and shootlet. Shoot residue and simultaneous growth significantly decreased height and dry matter of all target species except in noogroora. In this study negative and positive effects of allelopathy were showed. Results showed that *R. communis* can decrease the ability of weeds to germinate and grow

Key words: allelopathy, germination and growth stages, weeds, *R. communis*, drought stress



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Title

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