

The ability of a plant species to inhibit germination of other plants is an untapped resource for weed control in crops that could revolutionize organic crop production. The main objective of this study was to evaluate the allelopathic potential of aqueous (5 and 10%, w/v) and methanolic (50mg ml⁻¹) extracts from several plant species (*Arbustus unedo* L., *Ericaceae*; *Daphne gnidium* L., *Thymeleaceae*; *Myrtus communis* L., *Myrtaceae*; *Olea europea* L., *Oleaceae*; *Pistacia lentiscus* L., *Anacardiaceae*; *Quercus suber* L., *Fagaceae*; *Ruscus aculeatus* L., *Liliaceae*; *Rhododendron ponticum* subsp *baeticum* (Boissier & Reuter) Handel-Mazzetti, *Ericaceae*) on seed germination and seedling growth of *Lactuca sativa*. To test the phytotoxicity 500µl of the extract were added separately over filter papers (9cm diameter) in Petri dishes. It was observed that methanolic extracts from *M. communis* and *R. aculeatus* completely inhibited seed germination, and almost all the extracts tested reduced seed germination and/or seedling growth. The inhibition of root growth was generally higher than of shoot growth, with the highest percentages of root inhibition being observed with the aqueous extracts of *D. gnidium* (80 and 72% for the extract at 5 and 10%, respectively) and *R. aculeatus* (74 and 78%), and with the methanolic extract of *Q. suber* (74%). Besides inhibiting seedling growth other morphological abnormalities occurred in the presence of the extracts. Roots of treated plants were thicker with a brownish color as compared to controls. Studies are being conducted to investigate the phytotoxic effect of the extracts on physiological and biochemical processes during germination and seedlings growth.

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