

Screening of germination inhibitors from plant extracts

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ABSTRACT

Several plant species release germination and/or growth inhibitors as a strategy to colonize and invade grounds occupied by other plants. As a result, these plants populate successfully the bare ground or displace other native plant communities. It is known that the production of these substances increases if plants grow in a harsh environment under stressful conditions. We have collected plant species that exhibited an invasive behavior in regions of Argentina with hostile geography and harsh environments. We have also harvest those plants popularly known for their medicinal use. Using parts and soil of these plants, aqueous extracts were obtained (8 g material/70 mL water). These extracts were tested for their inhibition activity in germination assays of lettuce. Extracts that produced inhibition were then tested on the germination of seeds of agronomic interest. 804 extracts were prepared and 184 of them inhibited lettuce germination at 100%: 98 were derived from Chaco and Santiago del Estero plants, 32 from Cordoba and San Luis and 54 from medicinal species. Regarding the distribution of extracts with inhibition activity, most of them were obtained from leaves (52%), followed by stems (14%) and flowers (12%). Among the extracts used in the germination of agriculturally important species, 23 were noted for their selectivity or aggressiveness in general.