EFFECTS OF LEAD AND CADMIUM ON SEED GERMINATION AND EARLY SEEDLING GROWTH OF TALL FESCUE, INDIAN MUSTARD, AND WHEAT


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Abstract: The effects of lead (Pb) and cadmium (Cd) on germination, early seedling growth, and dry biomass of three plant species were studied. Seeds of tall fescue (*Festuca arundinacea* Schreb. cv. Titan Ltd. and Spirit), red wheat (*Triticum aestivum* L.) and Indian mustard (*Brassica juncea* L.) were germinated in various concentrations (e.g., 0, 250, 500, 1000 ppm) of each metal, either in the form of lead nitrate or cadmium nitrate. Results showed that germination was significantly higher in red wheat and Indian mustard grown in Pb compared to the two cultivars of tall fescue. Cadmium nitrate inhibited germination and shoot growth more severely than Pb nitrate. Overall, Indian mustard was less affected, in terms of germination and shoot growth, by both Pb and Cd. Our results indicated that red wheat and mustard exhibited some degree of tolerance to Pb and Cd which warrants further investigations.

Key words: Tall fescue; Indian mustard; Wheat; Lead; Cadmium; Germination; Biomass