

Evaluating the effectiveness of mustard seed meal extract as effective weed control for organic potato farming in the Inland Pacific Northwest

Weed management, soil health, and nutritional quality of organically produced foods are among the highest priority of organic research topics according to organic farmers across the US. Organic farming often relies heavily on tillage to control weeds, but this practice depresses soil health by increasing soil compaction, increasing soil erosion from wind and rain, and disrupting soil microbial communities. Mustard seed meal has proven to be an effective herbicide with potential uses in organic farming but lacks practical application due to needing large quantities to achieve biopesticidal concentrations. By extracting the mustard seed meal into a more concentrated form, however, the extract becomes more logistically viable as an organic herbicide. This study will evaluate the efficacy of mustard seed meal extract in weed control within organic potato farming. Mustard seed meals have also shown to enhance soil health, so this study will also evaluate the effect of the extract on soil health as well as on the nutritional quality of the potatoes produced.

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Photo: Greenhouse trials testing different concentrations of the mustard extract on different weed species in preparation for field trials with potatoes.