

CWSS Student Paper and Poster Contest

Title: Comparison of pre-plant weed control treatments in organic broccoli

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Abstract:

Weed control is a major problem in organic vegetable cropping systems. It is essential to start with clean weed-free beds to reduce early season weed competition and potential crop loss. Pre-irrigation followed by postemergence control is an integrated weed management (IWM) strategy. Many methods can be used for postemergence control of the weeds that emerge after pre-irrigation, including mechanical, thermal, and chemical. The objective of this experiment was to compare the efficacy of four postemergence weed control methods prior to transplanting broccoli: hand-hoeing, propane flame, organic herbicide (GreenMatch®), and steam in pre-irrigated organic broccoli plots. A non-treated control plot was also included. Weed densities (prior to planting and prior to hand weeding) was 60 to 80% lower and time for hand weeding was more than 70% shorter in the treated plots compared to the untreated control. Flaming was the most efficacious treatment. The results for steaming, GreenMatch, and hand weeding were similar. Therefore, pre-irrigation followed by any of the pre-plant burndown (preferably flaming) treatments may be a good IWM strategy in organic broccoli systems.