

# Promoting translation and addressing hurdles to adoption for biosolarization as an alternative to soil fumigation to decrease worker exposure to toxicants

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## Problem

The health of California farmworkers and communities near farms is challenged by toxic and carcinogenic soil fumigants that are widely used to control, weeds, pathogens, and parasitic pests.

## Project overview

This project aims to validate the efficacy and safety benefits of a novel pest management technology, termed biosolarization, relative to conventional soil fumigants. Biosolarization uses a combination of passive solar heating and microbial fermentation in the soil to inactive soil pests. This study will use both laboratory and field tests to optimize biosolarization methods to achieve pest control in understudied cropping systems that rely on fumigation such as carrot and grape cultivation. Using the results from this study, we will engage in educational outreach to stakeholders to highlight the potential benefits of fumigation alternatives.

## Anticipated project outcomes

The projected impact is the promotion of agricultural worker and public health by advancing translation of a new technology to replace the conventional agricultural practice of using highly toxic fumigants to eliminate pests from soils. Adoption of biosolarization will reduce the current fumigant exposure risk for agricultural workers and communities near fumigated fields.



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