

## Soil Steaming for Weed and Disease Control – Demos on Your Farm

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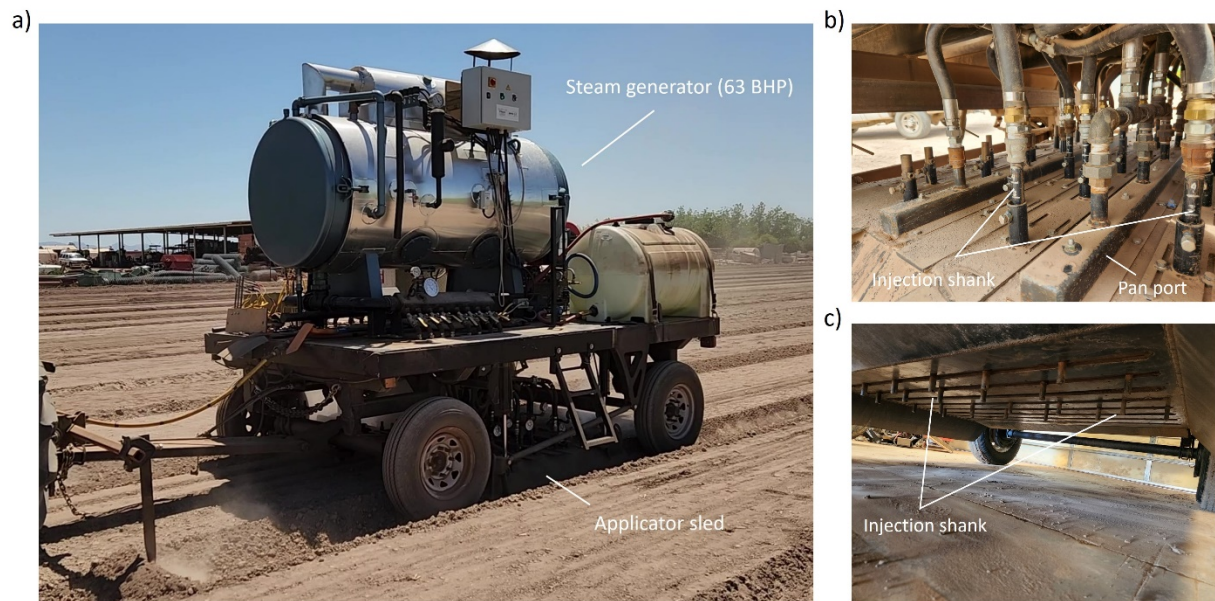
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Over the last couple of years, we developed a prototype steam applicator for injecting steam into the soil prior to planting. The concept behind soil steaming is similar to soil solarization - heat the soil to levels sufficient to kill soilborne pathogens and weed seeds (typically 140 °F > 20 minutes). The device is principally comprised of a 63 BHP steam generator mounted on an elongated bed shaper (Fig. 1). The apparatus applies steam via shank injection and from rectangular ports on top of the bed shaper. After cooling (< ½ a day), the crop is planted into the disinfested soil.

Trial results have been very promising and reported in previous UA Veg IPM articles. In brief, the multi-year studies have shown that soil steaming provides excellent weed control (>90%), suppresses problematic soilborne diseases (Fusarium wilt of lettuce > 50%, lettuce drop > 70%) and increases crop yields (>24%).

This season, we would like to demonstrate the technique to interested growers. In addition to obtaining grower feedback on the viability of soil steaming, a second objective would be to validate our small plot research results at the field scale level. The machine can be adjusted to work with most bed configurations including 40", 42", 80" and 84" beds, and work with any crop, including organic crops (soil steaming is organically compliant). So far, the device has been successfully tested in iceberg lettuce, romaine, baby leaf spinach and carrot crops.

If you are interested in an on-farm demo of soil steaming, please let me know. I'd be happy to work with you.



**Fig. 1.** a) Band-steam applicator principally comprising a 63 BHP steam generator mounted on a bed-shaper applicator sled. Steam applicator sled b) top view and c) bottom view. Click [here](#) or on the image above to see the device in action.