

## **Control of Fusarium Wilt with Band-Steam – Trials Show Mixed Results**

**Mark C. Siemens**

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Last fall, we established two trials investigating the use of band-steam to control Fusarium wilt of lettuce. We utilized the prototype band-steam applicator (Fig 1) described in previous UA Veg IPM articles ([Vol. 11 \(15\)](#)) to inject steam into the soil prior to planting. The concept behind band-steam is to disinfect narrow bands of soil using high temperature steam. In the trials, the steam applicator was configured to treat a 4" wide by 4" deep band of soil centered on the seedline.

Experiment results were mixed. At the field site where Fusarium inoculum loads were high, band-steam provided no benefit with virtually all lettuce plants succumbing to the disease (Fig 2a). However, at the trial site where Fusarium inoculum levels were moderate, disease incidence was reduced by more than 40%, and plants appeared to be healthier and more vigorous (Fig. 2b). We'll be harvesting these plots soon so stay tuned to learn whether these differences translate into significant yield increases.

If you are interested in trying band-steam on your farm, please let me know. We are in the process of constructing a second-generation band-steam applicator that has a higher capacity steam generator and simpler design than our first prototype and are seeking collaborators.

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**Fig. 1.** Band-steam applicator principally comprising a 35 BHP steam generator mounted on a bed-shaper applicator sled.

a)



b)



**Fig. 2.** Lettuce seedlings at field sites with (a) very high and (b) moderate levels of Fusarium wilt of lettuce inoculum. Band-steam (left) and untreated (right) plots are shown.