

Evaluation of new cultivation equipment for organic vegetable farming

Principal Investigator: Dr. Doug Doohan, Department of Horticulture & Crop Science, OSU

Key Personnel: Chengsong Hu

Method

The purpose of this project is to gather preliminary data on the effectiveness of Weed Bar, Organic Weed Puller and Tilmor cultivator, determine how better to tune them for local conditions, and demonstrate the implements to interested farmers.

Testing of Weed Bar was implemented between July and August, 2018 in a field infested by Canada thistle. Four different treatments were tested: 1) cultivate once a week at four inches deep; 2) cultivate once every two weeks at four inches deep; 3) cultivate once every four weeks at four inches deep and 4) cultivate once every four weeks at 8 inches deep. All the treatments were followed by a planting of cover crop in mid-September. We are expecting to evaluate the result next spring.

Weed Puller was tested to pull tall weeds out of a field. The soil condition in Wooster makes it difficult to pull the entire plant out of the soil. For example, Weed Puller only broke off the top of a giant ragweed but didn't remove the root. To take the whole weed out it is necessary to pull close to the root of the weed, which is impossible if a crop exists. An ideal soil type, like sandy soil, is required for Weed Puller to work

Tilmor' finger cultivator has already been mounted on our tractor but hasn't been tested yet. We expect that finger cultivator will work well in row crops and will loosen the soil next to the crop, leading to the death of small weeds.

Figure 1: Weed bar test in a Canada thistle-infested field on 7/10/2018

