

# Exploring Adoption of Reduced Tillage Practices in Organic Vegetable Production

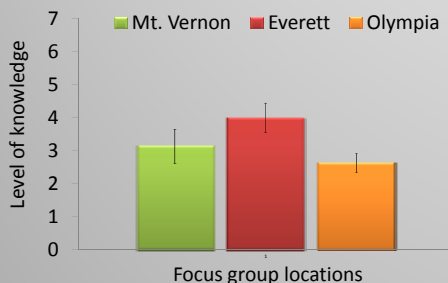
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## Introduction

Organic vegetable farmers are looking for ways to reduce soil degradation, fuel consumption, and contribution to greenhouse gases that can be caused by extensive tillage. Our interactive researcher – grower participatory project is seeking to identify successful reduced tillage methods for western Washington. To increase participation among organic growers and seek multiple perspectives, three focus groups were held in spring 2011. In each of the focus groups organic growers and participating researchers probed the biophysical, social, economic, and technical factors that help or hinder adoption of reduced tillage practices. Current tillage and crop management practices, weed and other pest management strategies, equipment needs, and how growers currently adopt new management styles were also explored.

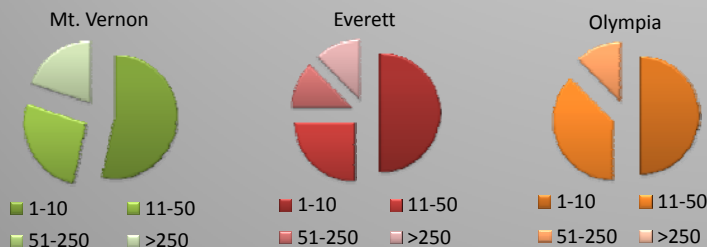
## Pre-focus group survey



**Figure 1.** Average participants self-ranked level of knowledge of reduced tillage techniques by location. Scale: 1= Very little, 7 = Great deal of knowledge. Error bars = +/- 1 standard error of the mean.

Participants were asked to complete a pre-focus group survey where their level of knowledge of reduced tillage techniques in organic vegetable production was assessed. The majority of participants across locations indicated some familiarity (Fig. 1). Although most participants did not use the specific strategies presented by the researchers, many have attempted to reduce tillage in one form or another on their farm.

## Acreage ranges farmed by participants



**Figure 2.** Managed acreage ranges of reduced tillage focus group participants by location.



*"We really want to encourage use of cover crop and reduced tillage in organics. And we are really pleased with the progress that is being made in the trials and methods. There is concern about translating these into production operations on mixed vegetable direct market farms"*

- Steve Hallstrom (pictured), of Let Us Farm, participant in the Olympia focus group used this WSU research front-mounted roller-crimper to terminate cover crops.

## Methodology

A Focus Group Moderators' Guide was developed collaboratively between the Reduced-Tillage Working Group (the authors), and the Social & Economic Sciences Research Center (SESRC) faculty. Topics included in the guide were based on the project's four major objectives:

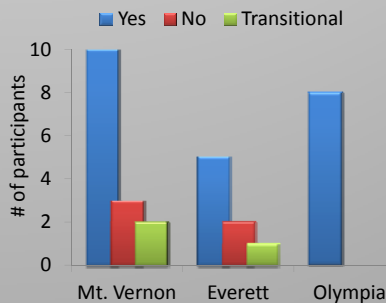
- 1) Identify the level of knowledge and experience of practicing reduced tillage in vegetable production systems.
- 2) Identify potential barriers to adopting reduced tillage practices and potential opportunities to increase adoption.
- 3) Identify methods of new practice adoption among organic farmers.
- 4) Identify current practices of weed management and cover cropping within these systems.

Farmers were selected from the Washington State Department of Agriculture list of Certified growers in the thirteen western Washington counties. Project researchers also suggested other growers, particularly participants in a 2009 symposium, "No-Till Organic Vegetable Production in Western Washington". Project researchers participated in the discussion by interjecting information on reduced tillage and cover cropping practices and clarifying critical points regarding current project related research.

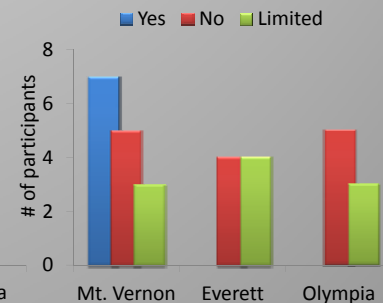
Focus groups were held in Mt. Vernon, Everett, and Olympia, Washington. Upon arrival at the site, participants were also asked to complete a pre-focus group survey where their level of knowledge of reduced tillage techniques in organic vegetable production was assessed.

## Characteristics of focus group participants

Across the three focus groups, participants ranged from slightly to very familiar with reduced tillage practices (Fig. 1). Representative acreage ranged from 1 – 1000 acres for each individual grower (Fig. 2). The number of attendees ranged from eight to fifteen, most of whom were certified organic (Fig.3). While some have tried various types of tillage reduction on their farm (Fig. 4), most participants had not, but were eager to learn and share their experiences relative to aspects of the new practices.



**Figure 3.** Number of farmer participants currently certified organic (Yes) by location.



**Figure 4.** Number of farmer participants who have used (Yes), not used (No) or had limited attempts at tillage reduction on their farms.

## Key findings

- The majority of participants across locations indicated some familiarity with reduced tillage techniques (Fig. 1). Many growers have attempted to reduce tillage in one form or another on their farm, though they have not yet employed roller-crimpers or other specialized tools designed for reduced tillage systems.
- Participants appreciate how reduced tillage can increase soil quality. Several talked about how rich their soil had been when it was first tilled and how repeated tillage reduced organic matter and led to a hard pan.
- Participants voiced that specific practices and specialized equipment will need to be adapted to their situation, particularly in light of our wetter climate and soil.
- There were concerns about weeds and other pests in reduced tillage systems.
- There was interest in which cover crops work the best and when to plant cover crops
- Before adopting new practices, growers want to know that they have been tried in real settings and under conditions similar to their own situations.

