

# Demo Plot Results

## Quarter-acre Demonstration Plot Tijuana River Valley, San Diego

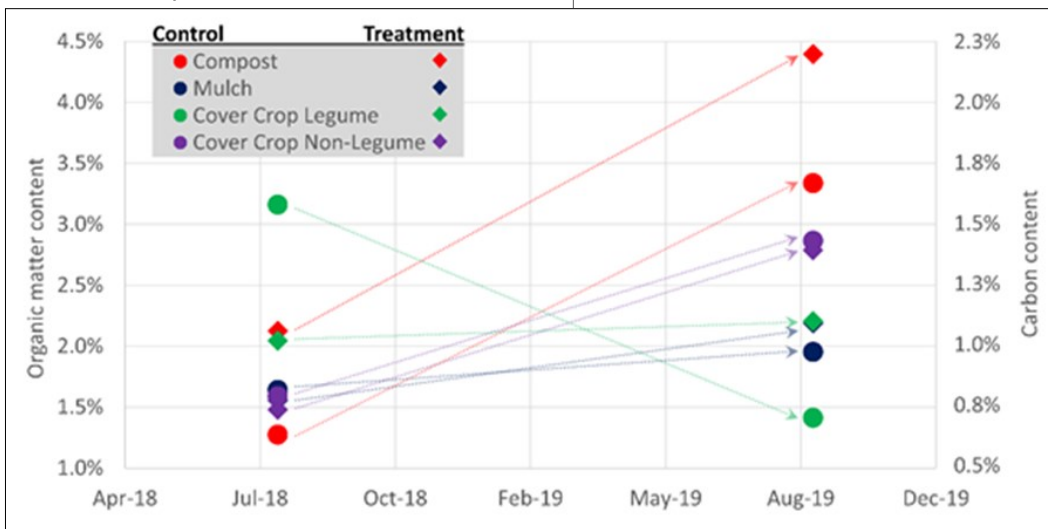


In August of 2018, prior to establishment of the field and implementation of the four practices, baseline soil samples were taken. Soil samples are taken every year in August. Yields are also being monitored for winter crops and summer crops.

### Soil organic matter content

Between August 2018 and September 2019, soil tests revealed an overall increase in soil organic matter (SOM), total carbon content, and total nitrogen content for all treatment and control Fields, except for Field 3 control (legume cover crop) (Figure 1).

**Figure 1:** Soil organic matter content and soil carbon content for Fields 1-4 control and treatment plots.



The highest increase in SOM was observed for the field treated with compost, followed by its control counterpart and the field treated with non-legume cover crops.

It is difficult to make a larger interpretation of this data at this time, especially with such limited data and on such a short timescale. We expected an overall increase in soil organic matter, which is visible at all Fields except the control field for legume cover crop.

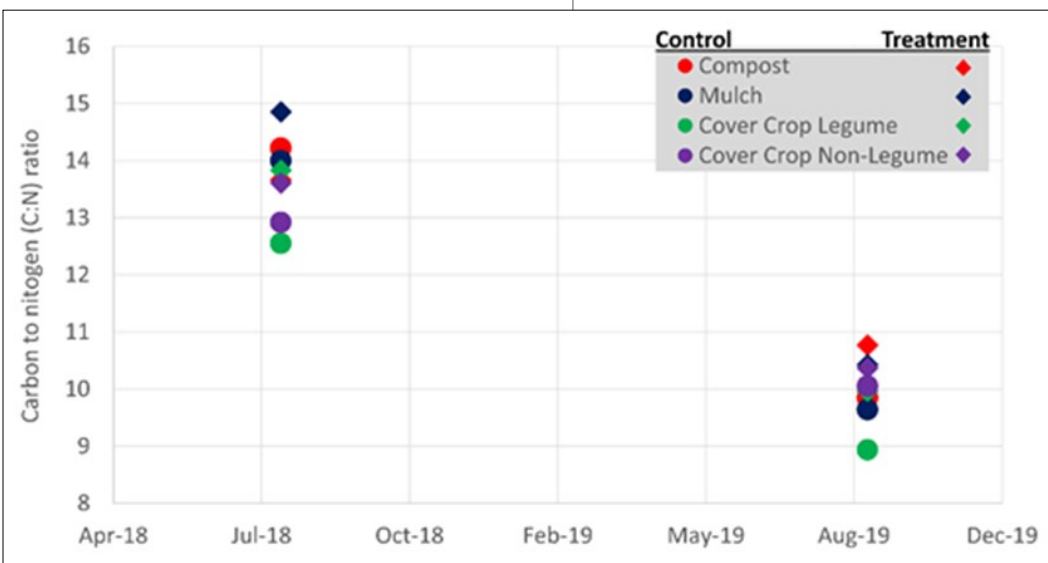
It is difficult to separate the effect of the treatment from other effects like

watering and soil disturbance. Tests over a longer time frame is the only way to know more about the effect of the treatment.

### Carbon to nitrogen ratio

Figure 2 shows the C:N ratio of the soil. The C:N ratio measures the amount of carbon compared to the amount of Nitrogen. A high C:N ratio means that there is a high amount of carbon compared with

**Figure 2:** The ratio of Carbon to Nitrogen (C:N ratio)



compared to the amount of Nitrogen. A high C:N ratio means that there is a high amount of carbon compared with Nitrogen. It also means that the organic matter (containing both carbon and nitrogen) is early in the stage of decomposing. A low C:N ratio can be interpreted meaning that the organic matter has decomposed and much of the carbon has been released as CO<sub>2</sub>, but the remaining carbon may be stored in the soil. If the decomposed organic matter interacts with the soil minerals it can become unavailable for microorganisms. This is the process of carbon sequestration.

# Demo Plot Results

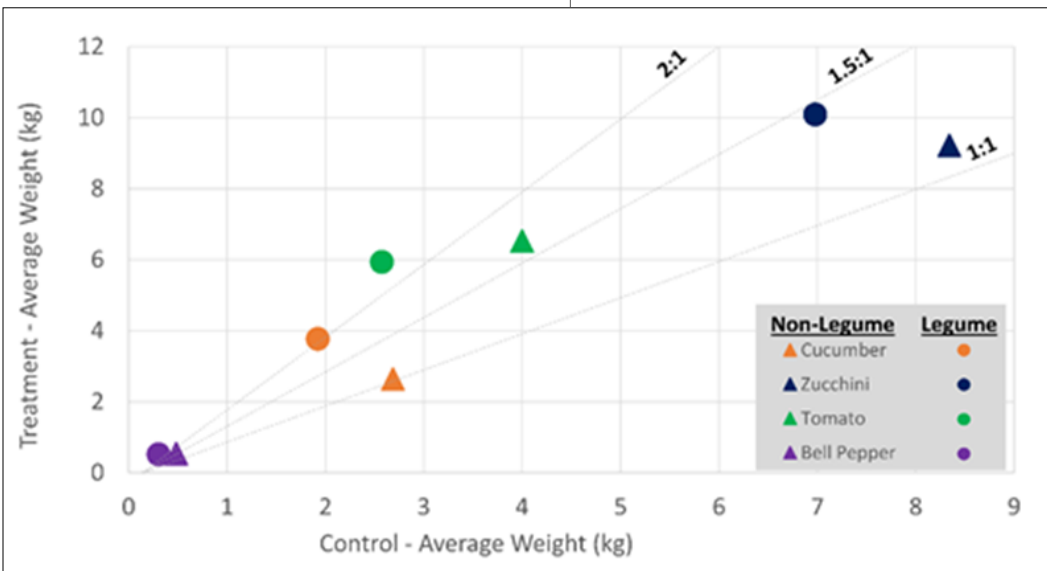
## Quarter-acre Demonstration Plot Tijuana River Valley, San Diego



### Yield of winter vegetables in fields treated with cover crops

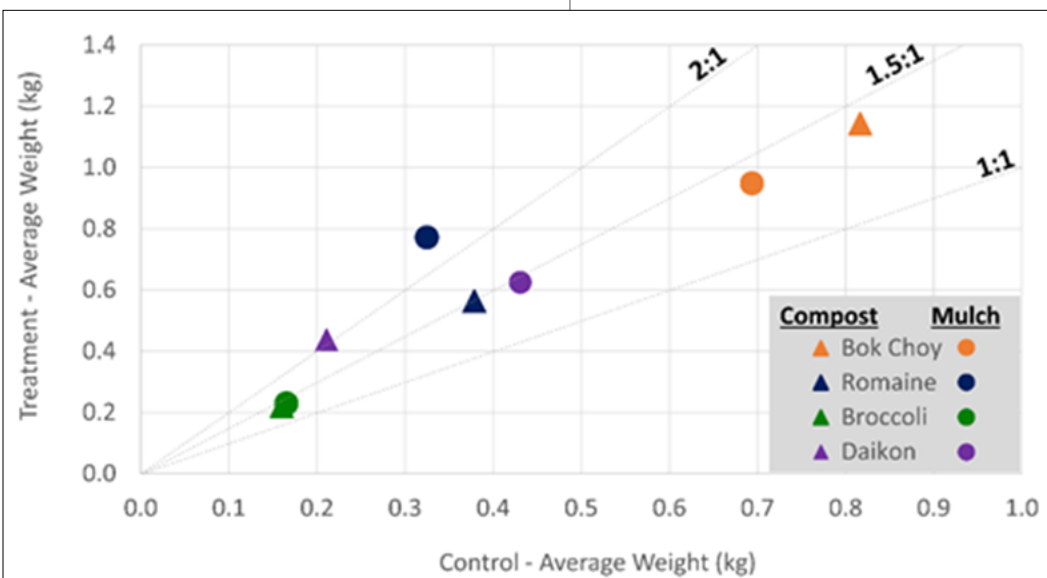
How to understand the graph: The horizontal line represents the average weights of vegetables grown in the control plots (no conservation practices) and the vertical line represents the average weights of vegetables grown in fields treated with legumes or non-legumes. Data points on the 1:1 line means that there was no difference between the yields in the control plot and the treatment plot. Data points above the 2:1 line means that the yield in the treatment plot

**Figure 3:** Yields of vegetables in fields treated with legume and non-legume cover crops.



means that the yield in the treatment plot (tomato in the field with a legume cover crop) were twice as high as in the control plot.

**Figure 4:** Yields of vegetables in the field treated with compost and mulch.



### Yields of vegetables in the fields treated with compost and mulch

How to understand the graph: The horizontal line represents the average weights of vegetables grown in the control plots (no conservation practices) and the vertical line represents the average weights of vegetables grown in fields treated with compost or mulch. Data points on the 1:1 line means that there was no difference between the yields in the control plot and the treatment plot. Data points above the 2:1 line means that the yield in the treatment plot (romaine in the field with mulch) were twice as high as in the control plot.