

Table 12. Effect of incorporated optimally planted mustard cover crop<sup>1</sup> on **potential to support higher plant population in yellow transplanted onions** (c.v. Bradley) grown in the muck soils at **Mortellaro** in Elba, NY: **small-plot field trial**.

| Treatment  | Yield: bulb size distribution (per 50 ft <sup>2</sup> ) |              |                    |              |                   |               |             |             |                      |            |             |           |             | Estimated Total Marketable Yield (cwt/A) |
|--|---|--------------|--------------------|--------------|-------------------|---------------|-------------|-------------|----------------------|------------|-------------|-----------|-------------|--|
|  | Undersize (<1.75")                                      |              | Small (1.75-2.25") |              | Medium (2.25-3")  |               | Jumbo (>3") |             | Bacterial Bulb Decay |            |             | Culls     |             |  |
|  | No. bulbs*  | Weight (lb)* | No. bulbs*         | Weight (lb)* | No. bulbs         | Weight (lb)   | No. bulbs   | Weight (lb) | No. bulbs*           | % of bulbs | Weight (lb) | No. bulbs | Weight (lb) |  |
| <b>Standard</b> <sup>2</sup><br>128,937 plants/A | 4.1   | 0.24         | 9                  | 1.4          | 72 c <sup>6</sup> | 24.0 c        | 58          | 30.8        | 2.4                  | 1.6        | 0.67        | 2.0       | 0.6         | 493                                      |
| <b>21% more</b> <sup>3</sup><br>156,817 plants/A | 2.4   | 0.13         | 10                 | 1.4          | 88 c              | 29.7 bc       | 47          | 24.2        | 1.8                  | 1.2        | 0.46        | 0.8       | 0.2         | 483                                      |
| <b>38% more</b> <sup>4</sup><br>177,725 plants/A | 4.2   | 0.26         | 23                 | 3.3          | 107 b             | 32.3 b        | 31          | 16.1        | 2.5                  | 1.5        | 0.78        | 1.3       | 0.2         | 453                                      |
| <b>62% more</b> <sup>5</sup><br>209,089 plants/A | 7.8   | 0.49         | 27                 | 4.0          | 134 a             | 40.4 a        | 28          | 14.2        | 1.6                  | 0.8        | 0.52        | 1.0       | 0.3         | 515                                      |
| <b>P Value (<math>\alpha=0.05</math>)</b>        | <b>NS</b> <sup>7</sup>                                  | <b>NS</b>    | <b>NS</b>          | <b>NS</b>    | <b>0.0000</b>     | <b>0.0012</b> | <b>NS</b>   | <b>NS</b>   | <b>NS</b>            | <b>NS</b>  | <b>NS</b>   | <b>NS</b> | <b>NS</b>   | <b>NS</b>                                |

\*statistics performed on transformed data using  $\arcsin(x/100)^{0.5}$  for % data and  $\log(x+1)$  for weight data; untransformed data presented.

<sup>1</sup>Brown/yellow mustard blend (c.v. Caliente) 12 lb/A; optimally planted on Aug-7-2013 and incorporated via chopping, plowing and rolling on Oct-23-2013 when mustard 5 feet tall with 70% in bloom. Onions transplanted by hand on May-13, 2014.

<sup>2</sup>**standard planting configuration:** 3.7 plants/ft (double row); 3.25 inch plant spacing; 4 rows/bed; 15 inch between rows.

<sup>3</sup>**21% more planting configuration:** 3.0 plants/ft (single row); 4 inch plant spacing; 5 rows/bed; 10 inch between rows.

<sup>4</sup>**38% more planting configuration:** 3.4 plants/ft (single row); 3.5 inch plant spacing; 5 rows/bed; 10 inch plant spacing.

<sup>5</sup>**62% more planting configuration:** 4 plants/ft (single row); 3 inch plant spacing; 5 rows/bed; 10 inch plant spacing.

<sup>6</sup>Numbers in a column followed by the same letter are not significantly different, Fisher's Protected LSD test,  $p < 0.05$ .

<sup>7</sup>NS: Not significant according to Fisher's Protected LSD test,  $p > 0.05$ .