



WSU Compost Outreach Project 2014

Commercial Compost Increases Production of Local Crops

Andrew Corbin & Hallie Harness, WSU Snohomish County Extension and Leif Fixen, Snohomish Conservation District

Williams Farm Beet Seed Trial



Bailey Compost was applied on a beet seed crop on Williams Farm in Stanwood, WA at a rate of ~55 cu yds/acre. Beet seed is a key crop for western Washington, which supplies 95% of the US and 50% of the world's supply of table beets. One month after application, soil tests revealed an increase in plant available nitrogen in the compost-amended plots (Fig. 1). Compost treatments exhibited slightly larger plants and greater emergence as compared to the control. Ten days after swathing, harvest data collection took place on 9/22/2014 with cooperation from farmer Garrett Williams and several Williams Farm employees. Beet seed collected from 200 ft sections of four compost and four control replications revealed a 21% (175.25 lbs/acre) average increase in beet seed yield in the compost treatment compared to the control (Fig. 2).

Fig. 1: Williams trial 2014
Plant available nitrogen

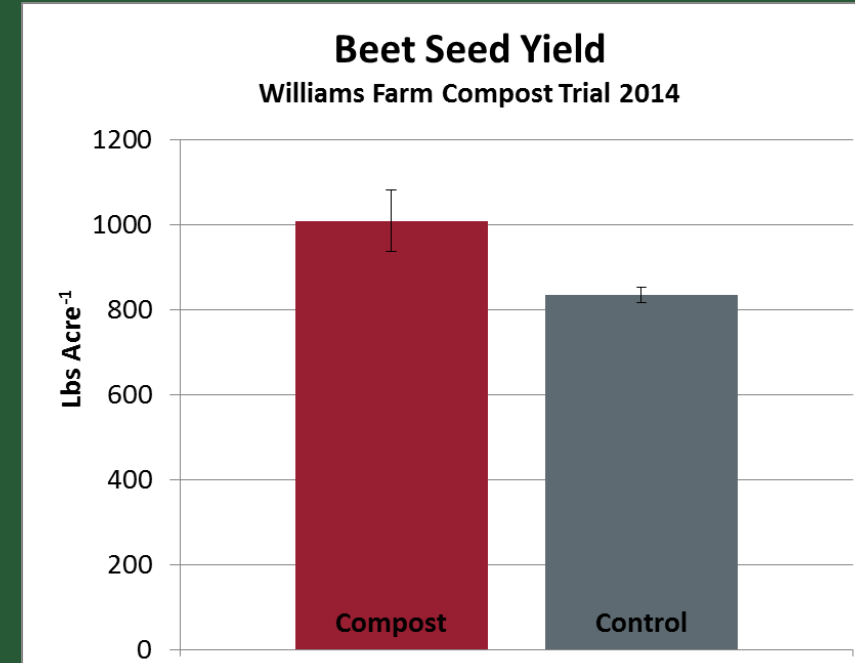
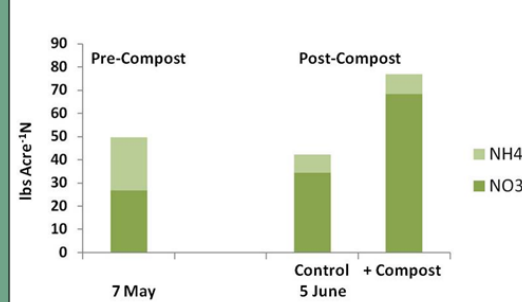


Figure 2: Beet seed yield.

Darrell Hagerty Farms Organic Green Bean Trial

Utilizing WSDA organic compost provided by Lenz Enterprises, WSU Snohomish County in partnership with the Snohomish Conservation District examined the effect of compost on organic green bean yield at Darrell Hagerty Farms. As the second largest organic farmer in western Washington, Darrell is a key participant for the compost trials program. Compost was applied at a rate of 6.5 dry ton/acre in five treatment rows. Pelleted chicken manure and Nutra-rich fertilizer was applied evenly across all plots. Over the growing season, Darrell's field saw significant weed pressure although some replications showed larger green bean plants compared to the business-as-usual control. Green bean harvest took place on 8/6/2014. Green beans were removed from the plants in three subsamples per rep and marketable beans were separated. Looking at the marketable beans only, compost resulted in a statistically significant 19% (.64 ton/acre) increase in yield (Fig. 3) which translates to a \$312/acre gross increase in profit for Darrell. At this application rate (24.8 cu yd/acre) and including spreading expenses such as labor, fuel, and machinery, the break-even point for Darrell is \$12.58 per cubic yard of compost, delivered and applied.

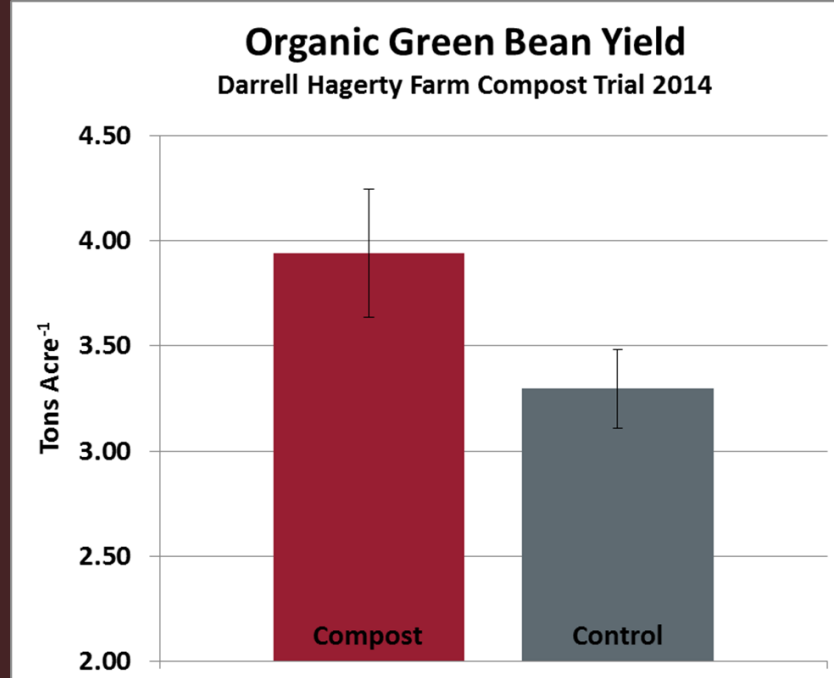


Figure 3: Organic green bean yield.



Multi-year compost applications at Carleton Farm

As contributing participants since 2011, Reid and Darren Carleton of Carleton Farm applied Cedar Grove compost in the same plot three years in a row in 2011, 2012, and 2013. Increases have been recorded for two consecutive years of Pumpkin yield, and marketable Sweet Corn ear weight. The 2014 research crop was pickling Cucumbers and soil tests revealed no need for nutrients so no additional compost was applied. Three treatments were examined: Business-as-usual, two years of compost (Compost 2yr) and three years of compost (Compost 3yr). 2014 harvest took place in July, approx. 10 days earlier than the farmers anticipated due to the ideal growing season. Compost 2yr and 3yr yield averages resulted in 2.55 additional tons/acre of marketable cucumbers compared to the control (Fig. 4). At \$1.30/lb, an additional \$6,630/acre of gross profit is possible!



Total Marketable Cucumbers

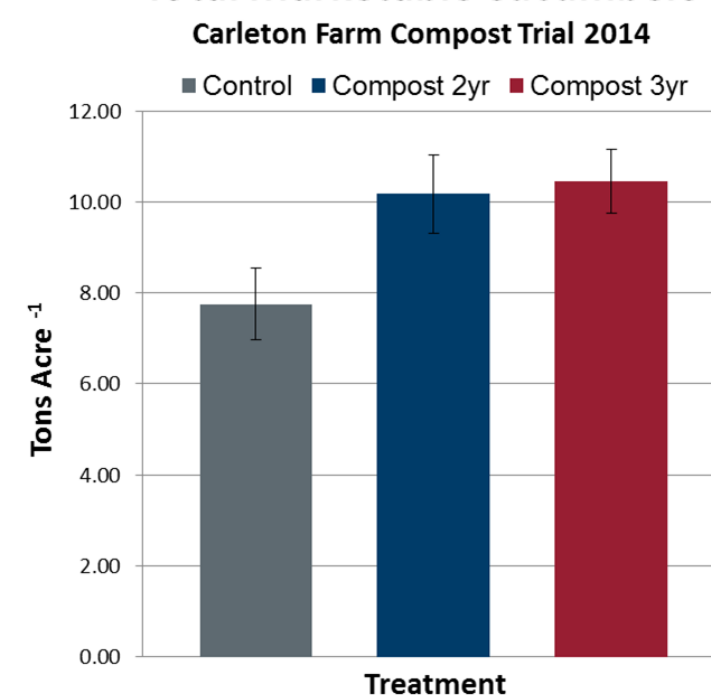


Figure 4: Cucumber yield.



Photos by: Andrew Corbin and Hallie Harness

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