

The organic blueberry industry in Oregon: results of in-person, on-site interviews with growers in 2015

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Abstract

Certified organic blueberry area in the USA grew nearly ten-fold from 2003 to 2011. In 2015, there were an estimated 283 ha of certified organic blueberry in Oregon. New transitional and organic blueberry (*Vaccinium* sp.) fields continue to be planted in this region by small and diversified organic farmers at a rapid rate. In 2015, a survey was developed to conduct on-site in-person interviews with certified and transitional organic growers in Oregon. Quantitative and qualitative data were collected including pre-planting practices and soil amendments, management systems, cultivars and area grown, soil pH and fertility programs, pruning, irrigation, pest management, average yields, harvesting and postharvest practices, sales, and marketing. Different farm sizes and business structures were included in the 28 interviews conducted. Although the diversity of farms varied, the majority of operations were small farms of 8 ha or less total certified organic land and a total blueberry area less than 2 ha. 71% of the farmers interviewed had diverse organic production systems including crops other than blueberry. Blueberry production systems were diverse among farms including: 14% using drip irrigation, 61% overhead and 25% a combination of both; slightly less than half were grown on flat ground; 70% had fields with plants at least 10 years old; and all pruned at least some part of their fields annually. Soil and tissue testing, use of pre-plant soil amendments, nitrogen and other fertility management practices varied widely among growers. The most important pest problems noted were weeds, spotted wing drosophila (*Drosophila suzukii*), mummy berry (*Monilina vaccinii-corymbosi*) and Blueberry shock virus (BIShV). Other important pests included birds, rodents and deer. Growers described a wide variety of harvest methods and marketing outlets for their blueberry fruit with the vast majority of them producing for fresh direct consumer sales or for fresh wholesale or retail buyers.

Keywords: blueberries, survey, production practices, small farms, fertility, irrigation, marketing, pest management

INTRODUCTION

Worldwide blueberry (*Vaccinium* sp.) production and consumption have steadily increased since the 1990s (Strik, 2014), mainly due to an increase in crop profitability, high consumer demand for the crop, and successful marketing campaigns showcasing the human health benefits of consuming the fruit (Brazelton and Strik, 2007; DeVetter et al., 2015). Certified organic blueberry area in the USA increased from an estimated 194 ha in 2003 to 1,665 ha in 2011 (Strik, 2014). There has also been an increase in the number of organic producers, quantity of fruit produced and value of crop sales (USDA, 2010, 2015), notably in the western part of the United States which accounted for 26% of the total planted highbush blueberry area in the USA in 2011, and at the same time accounting for 64% of the total organic area planted (Strik, 2014). A great driver of the increase in production is the higher value of certified organic fruit and the relative ease of organic production in this region (Strik, 2014). Increased interest in organic blueberry production has been supported by research on organic production systems (Larco et al., 2013a, b; Strik, 2006, 2016), root physiology (Valenzuela-Estrada et al., 2017), disease (McGovern et al., 2012), insect (Van



Timmeren and Isaacs, 2013), and weed (Krewer et al., 2009) control, consumer preferences for organic blueberries (Hu et al., 2009), and production costs (Julian et al., 2011, 2012).

In 2014 there were 88 ha of certified organic blueberry in production in Oregon (Organic Survey, USDA Census of Agriculture, USDA, 2015). However, industry and extension estimates were much higher for planted (perhaps not yet in production) area in 2011 (305 ha; Strik, 2014). New transitional and organic blueberry fields continue to be planted in this region by small and diversified organic farmers at a rapid growth rate. An actual, on-site assessment of the organic blueberry industry has never been conducted in Oregon and would be useful for obtaining more information on the challenges and successes faced by organic blueberry growers. Additional information regarding production practices, marketing strategies and price premiums, as well as verifying basic information such as existing and planted area and cultivars of importance was needed. The objective of the study was to characterize and describe the current status of the organic blueberry industry in Oregon through conducting an on-site, in-person survey and interviews with diverse, certified and transitional growers across the state.

MATERIALS AND METHODS

In 2015, a survey was developed to conduct on-site in-person interviews with certified and transitional organic blueberry growers in Oregon. A list of certified growers was obtained from the USDA National Organic Program database (USDA, AMS), and accredited organic certifiers. The survey was conducted as an oral, on-site, in-person questionnaire. Quantitative and qualitative data collected included cultivars and area grown, pre-planting practices and soil amendments used, management systems, soil pH and fertility programs, pruning, irrigation and pest management, average yields, harvesting and postharvest practices, and sales and marketing information for each farm. Different farm sizes and business structures were included in the survey. Growers were located throughout Oregon. Only one interviewer (Fernandez-Salvador) conducted the survey to ensure consistency.

Data were analyzed and one way tables were chosen to present most of the quantitative results. Multiple response data were analyzed using separated table analysis. A rating scale was used to ask growers about their reasons for choosing to be organic in regards to their farm practices and production system; five options were provided: philosophical; environmental impact; health concerns for self, family and/or workers; market opportunity; fashionable production trend; and awareness of synthetic pesticide impacts. The survey is in progress; preliminary results will be presented here.

RESULTS

Certifier supplied information

Based on information obtained from the USDA National Organic Program (NOP) database, there were six accredited certifiers operating in Oregon that certified blueberry growing operations: Oregon Tilth Certified Organic (OTCO; Corvallis, OR), Stellar Certification Services (Stellar; Philomath, OR), California Certified Organic Farmers (CCOF; Santa Cruz, CA), Organic Certifiers (Ventura, CA), Oregon Department of Agriculture (ODA; Salem, OR) and Washington State Department of Agriculture (WSDA; Olympia, WA). Once these were contacted to confirm the number of operations certified we determined that only the first four actively certified blueberry farms in Oregon for a total of 69 operations (as of July, 2015). In addition, one transitional operation (in the process of converting the blueberry area to certified organic) was also interviewed for a total of 67 potential survey participants.

To estimate existing and future organic area in the State, information was obtained from the certifiers and later updated and verified by the operations surveyed. Based on the certifier data, there were an estimated 355 ha of certified organic blueberries in Oregon prior to conducting the survey.

State crop area and farm characteristics

This report includes 28 growers interviewed, equating to a 42% participation rate (the survey is on-going). These growers had 429 ha of certified organic blueberry. A more accurate estimate (including those growers not yet surveyed) would be for a total of 468 ha of certified organic area. Additionally, if area not currently certified, but planted and in transition, is included, we estimate there will be 597 ha of certified organic blueberry within the next 2 to 3 years in Oregon, based on our survey.

The majority of organic operations surveyed (53%) had a total farm area between 0.1 and 8 ha, followed by 25% of farms with 8.1 to 20 ha (Figure 1a). Additionally, most had certified blueberry area ranging from 0.1 to 2 ha (78%), followed by 14% of farms having from 2.1 to 8 ha of blueberry (Figure 1b). There were no farms with certified blueberry area in the range of 8.1 to 20 ha, but 8% had more than 20.1 ha (Figure 1b).

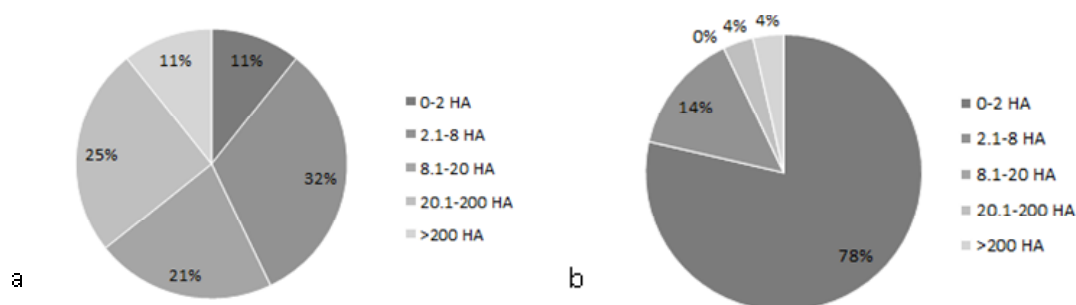


Figure 1. Percent of organic blueberry farms surveyed in Oregon (2015) by farm area category: a) total farm size and b) total blueberry acreage.

Farmers had diverse operations with a variety of crops other than blueberry being grown, including other small fruits, pome fruits, nuts, vegetables, herbs, agronomic crops, pastures, and animal production. 29% of growers were exclusively producing blueberries including northern highbush (*V. corymbosum*), complex hybrids between northern and southern highbush (e.g., ‘Legacy’), and rabbiteye (*V. virgatum*) cultivars (up to 46 cultivars grown). 11% of growers had parallel production of blueberries as organic and conventional at the same farm. All organic certified operations were located in the western side of the State with 86% of all farms surveyed in the central corridor in between the Coast and Cascade Mountain Ranges in the Willamette, Umpqua and Rogue valleys and the remaining 14% were in the Hood River and South Coast areas.

The majority of blueberry producers considered philosophy, environmental impact, health concerns, and awareness of synthetic pesticide impacts as “very important” reasons for being organic, while almost half (46%) and 40% considered a marketing opportunity as a “very important” or “important” reason for being organic, respectively. The majority of growers (68%) did not consider their organic production being a fashionable trend “an important” reason for choosing to be organic.

A considerable number of the certified organic growers surveyed also had the “Salmon Safe” and “Good Agricultural Practices” certifications (43 and 32%, respectively) concurrently. In contrast, 36% of participating farms had no additional certifications and only 4% were either “Biodynamic”, “Food Alliance”, “Fair Trade/social practices” certified or had a different alternative certification not included in this list.

Production practices

Blueberry production practices varied widely among operations depending on the growers’ approach. Modifying soil pH was common amongst the surveyed organic growers with 56% adjusting their soil pH prior to planting, mostly with sulfur or other approved acidifying agent for organic production (78%; coffee grounds, acidified barks or plant residues or other low pH alternatives) and 22% using lime to increase soil pH to the desired

range of 4.5 to 5.5 (Hart et al., 2006). Soil testing was done by 30% of the growers once a year, 5% twice a year, 12% every other year, 18% did not test their soil at all and 37% tested at some other frequency. For those using soil testing, 42% tested in the spring, 31% in the fall, 8% in both spring and fall, and 19% at other times of the year (mostly winter or early and late summer in the row when using drip irrigation). Half of the growers had never used leaf tissue testing, whereas the rest tested either once a year (25%), every other year (7%) or at some other frequency (18%). Of the growers doing tissue testing, 24% did it in late July to early August (as recommended; Hart et al., 2006), 29% in the spring (March-May), 12% after fruiting and 35% at different times (June or during late fall growth).

There was a wide range of organic or other soil amendments, and nitrogen and other macro- and micro-nutrient fertilizers used for fertility management varying widely amongst growers. Fertility sources used included animal meals and manure products, vegetable-based meals and mineral sources, all in liquid and solid forms (granular, pelletized or powdered).

Of all surveyed growers, 14% used drip, 61% overhead and 25% a combination of both types of irrigation systems. 48% of growers had flat ground as their row management system, either when blueberries were planted by them or by the previous owner of the farm, while 36% of the remaining operations had raised beds and 6% had a combination of both systems at the same farm. The remaining operations (10%) had an alternative row management system including circular mounded plantings, containers with substrate or a grass/legume rotational or grazing system around the blueberry plants.

Plant age varied widely with 70% of operations having plants at least 10 years old and the remaining planted after 2006 (less than 7-years-old). Most interviewed operators (96%) pruned all, or at least part, of their blueberry area annually. Hard, detailed pruning, the recommended method by Oregon State University (Strik et al., 1990, 2003) was done by 82% of the operations, by taking out big canes and non-fruitful or twiggy growth at the top of bush, thinning to the most vigorous and fruitful wood and shaping the bush to a vase for better light and air flow. The remaining 18% of growers practiced one or a combination of speed pruning (making only big cuts lower on bush; Strik et al., 2003), renovation pruning (for older bushes with large and aged wood), light pruning (quickly taking out a limited amount of wood from the top of the bush) or other alternatives such as mechanical hedging, use of ruminant animals to thin plants or fast chainsaw cuts to the base as well as combinations of all of the above.

The most important pest problems noted by growers were weeds (mentioned by 82%), spotted wing drosophila (*Drosophila suzukii*; 48%), mummy berry (*Monilina vaccinii-corymbosi*; 19%) and *Blueberry shock virus* (BlShV; 19%). Vertebrate problems were common amongst organic blueberry growers with 89% of them having issues with birds, 86% with rodents (voles, moles, squirrels or others), and 46% with deer. A wide range of additional challenges facing organic blueberry producers in Oregon were mentioned, including labor, weather and climate change, fertility and plant nutrition management, and financial and other farm specific problems (Figure 2).

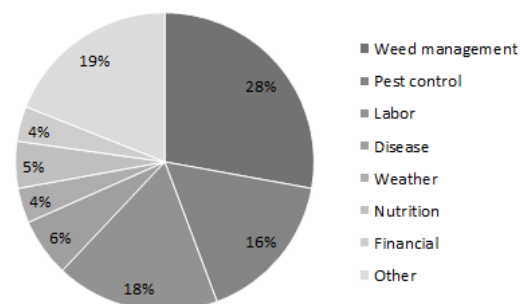


Figure 2. Greatest challenges faced by organic blueberry producers surveyed in Oregon (2015).

Harvest methods and marketing

82% of the organic growers surveyed harvested fruit by hand only and 11% by machine harvest exclusively, while the remaining 7% harvested fruit using both techniques. A variety of methods were used when picking including field packing for fresh or processing, packing and sorting in the field or at a separate facility, and bulk harvesting all in different packages including clamshells, recycled paper hallowcks, bulk cardboard or plastic containers. The largest share of the producers surveyed sold their fresh blueberries directly to the final consumer (45%), while 20% sold fresh fruit to retailers and 20% to wholesale buyers. Only 15% of the interviewed growers sold their fruit to processors.

CONCLUSIONS

Planted as well as production area for organic blueberries in Oregon has continued to expand as shown by the survey data collected to date. A wide variety of organic production systems are used depending mostly on the grower's approach and management philosophy.

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