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MP759: Grower Survey of Organic Pest Management Practices for Wild Blueberries in Maine with Case Studies

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Grower Survey of Organic Pest Management Practices for Wild Blueberries in Maine with Case Studies

Andrew C. Files

David Yarborough

Frank Drummond



Miscellaneous Publication 759

October 2008

MAINE AGRICULTURAL AND FOREST EXPERIMENT STATION
University of Maine

Grower Survey of Organic Pest
Management Practices for Wild
Blueberries in Maine with
Case Studies

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INTRODUCTION

In December 2006, as part of a larger, interdisciplinary project addressing organic pest-management strategies for lowbush blueberries, a survey was mailed to all known organic blueberry growers in Maine. The survey recipients included those who were certified organic and those believed to be growing organically although not certified. Of the 42 surveys mailed, 35 were returned. Three of the returned surveys, however, were not usable, resulting in an effective response of 32 surveys, or a response rate of 76%.

The survey included questions ranging from acreage owned and/or managed to market outlets to pruning techniques to education level of grower to methods of learning new information. The following report describes the results of that survey.

SURVEY RESULTS AND ANALYSIS

General Information

From the 32 usable surveys, we grouped respondents into the following size categories: 0 to 5 acres, 5+ to 10 acres, 11 to 15 acres, 16 to 20 acres, 21 to 30 acres, and 30+ acres (Figure 1). The smallest two increments of land ownership/management (0–5 acres and 5+ to 10 acres) constitute almost half the total number of respondents (14 of 32).

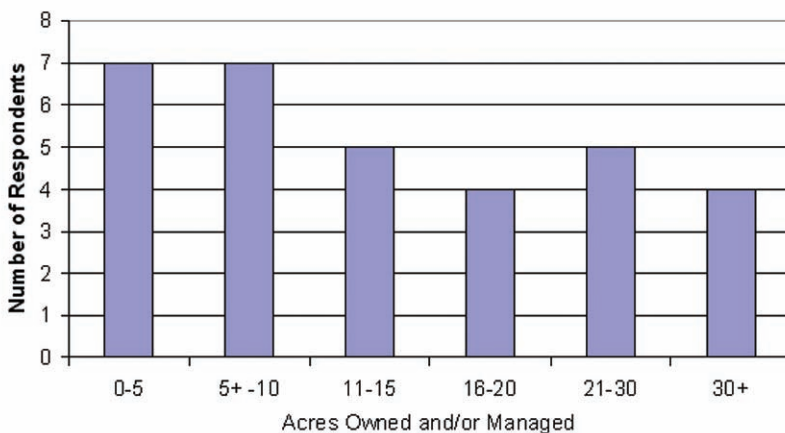


Figure 1. Number of respondents by total acreage owned and/or managed.

We further divided these results to compare the numbers of growers who own land to those who manage land, according to the above breakdown of sizes. When this was done (noting that some growers manage as well as own land), we found that larger-acreage operations included both managed land and owned land (Figure 2). Of all respondents, six growers managed land they do not own.

We also grouped respondents by the county in which they live. Almost two-thirds of the respondents (20 out of 32) were from Washington and Hancock counties, while roughly another 30% (nine out of 32) was from Waldo and Lincoln counties (Figure 3). The three “other” counties were Franklin, Knox, and Oxford.



Figure 2. Number of respondents by acres owned and/or managed. Some respondents manage, as well as own, land.

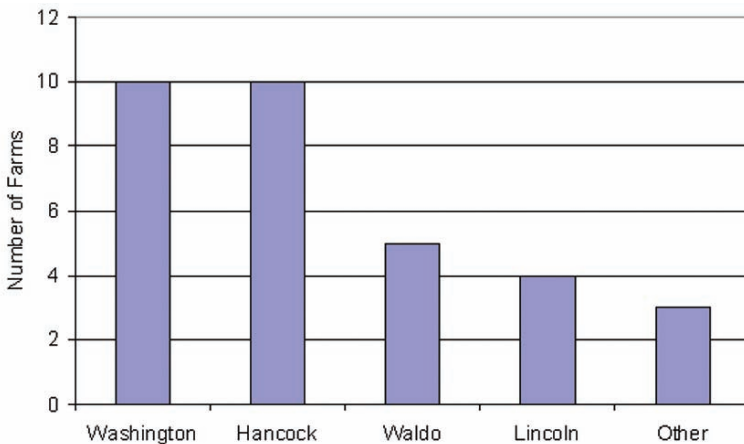


Figure 3. Farms by county.

Grower Characteristics

The average age of all respondents was 54 years. The age of the youngest respondent was 25 years and the oldest was 74 years. Figure 4 provides a breakdown of the number of respondents by age groups. As is evident from this figure, most respondents were in the 41–55 and 56–65 age ranges, which is consistent with the average age being 54 years.

Figure 5 presents the relationship between the respondents and their farming partners. The vast majority of farming partners are spouses, although there were also two relationships that were described as business associates and two as a sibling or a child. Six respondents did not indicate having a farming partner.

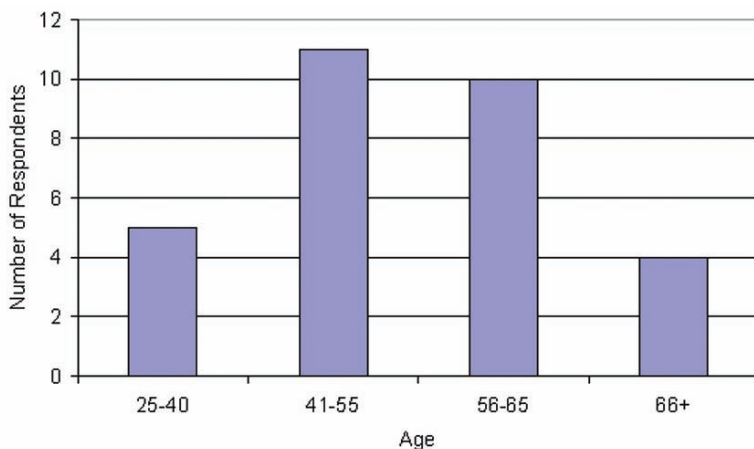


Figure 4. Age of respondents.

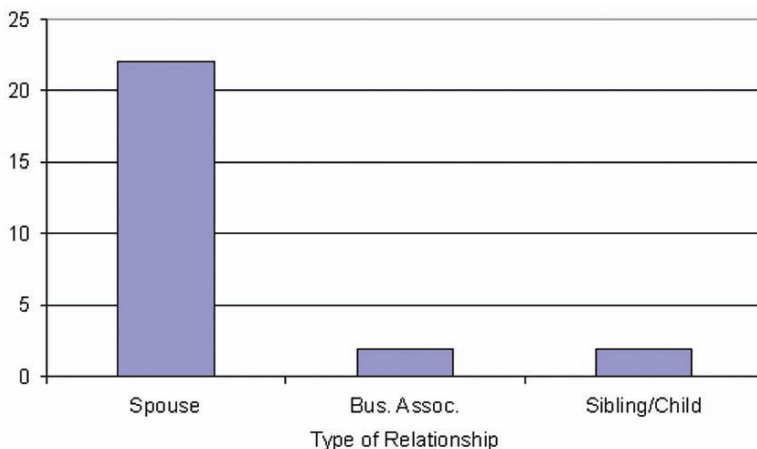


Figure 5. Farming-partner relationship.

Survey respondents were asked, “What is your education level? Please indicate the highest level attained.” (See Figure 6.) The three education classifications are “high school,” for those who attempted and/or completed high school; “college,” for those who attempted and/or completed an undergraduate college education; and “graduate school,” for those who attempted and/or completed a graduate education. One respondent did not answer this question.

Figure 7a shows that there were five respondents (out of 32) who farm full-time. Of those five, two growers grow organic blueberries full-time. Unsurprisingly, the two respondents who grow blueberries full time have some of the largest acreage. Given the few full-time growers, it is also not surprising that 24 of 32 respondents also worked off-farm. With the low number of full-time blueberries growers and the large number of growers who work off-farm, it is also not surprising that the average adjusted gross income (for 2005) by farm size was relatively low (Figure 7b). However, this may also be due to a poor pollination year because of inclement weather.

Of the 32 respondents, almost two-thirds had been growing blueberries organically longer than they had been growing them certified organically. In addition, a number of growers had never been certified organic. Therefore, Figure 8 represents the number of years that growers had been growing blueberries organically (certified or otherwise).

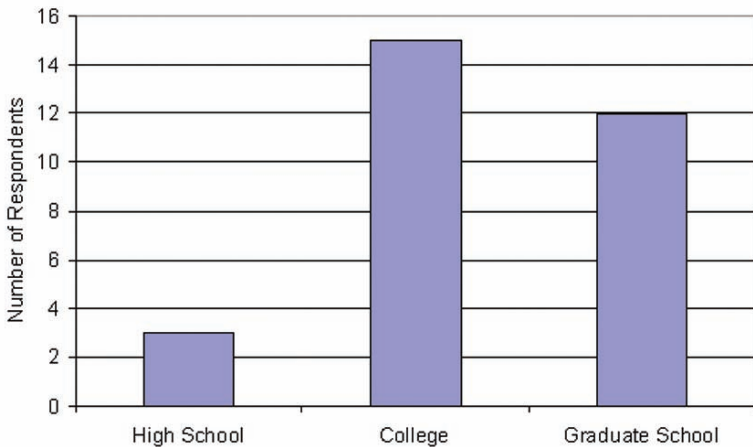


Figure 6. Education level.

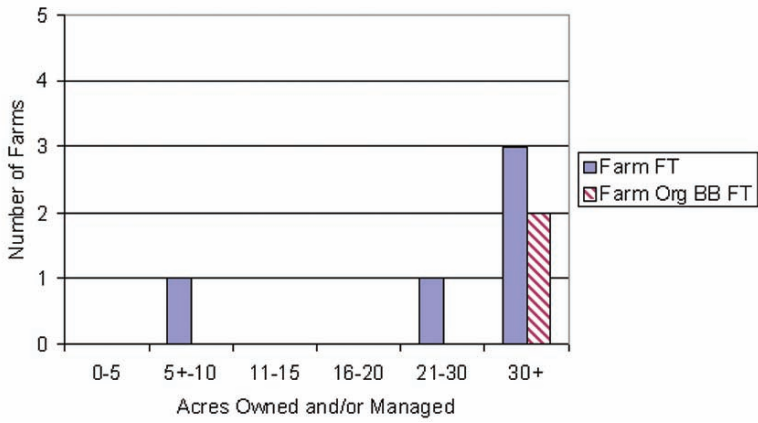


Figure 7a. Farm full-time and/or farm organic blueberries full-time by farm size.

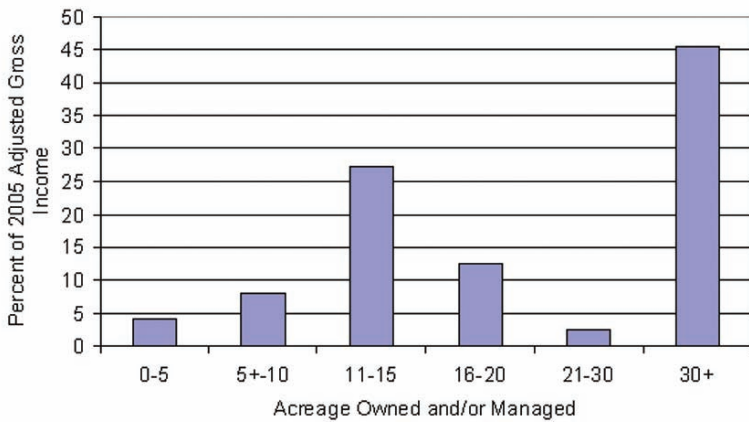


Figure 7b. Average income from blueberries as percentage of 2005 adjusted gross income by farm size.

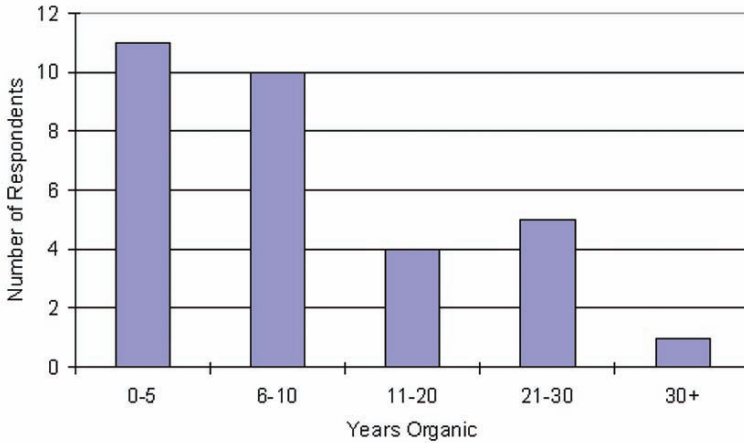


Figure 8. Years organic.

Production and Marketing Characteristics

Figure 9 reflects the number of respondents who implemented different plant management activities—specifically, adding fertilizer to the fields, adding sulfur to the fields, taking leaf samples to monitor plant health, and taking leaf samples to determine fertility needs. Respondents added sulfur to fields to reduce soil pH for grass control. The responses for all four activities were spread across all farm size categories.

Half of the survey respondents answered the question, “What is the most serious disease you have encountered?” Of those 16 responses, nine said that mummy berry was their most prevalent disease, while five said they had no disease pressure. Other diseases noted were *Botrytis* and red leaf disease.

Twenty of the survey respondents answered the question, “What is the most serious insect pest you have encountered?” Of those, 12 noted that blueberry maggot fly was a significant pest, and four respondents said they had no insect pressure. Other insects noted were ants, spiders, red-striped fire worms, and flea beetles. Only two of the respondents indicated using any organic insecticides or fungicides.

Although three respondents did not answer this question, 19 respondents indicated that natural predators and parasites were important in controlling pests. They noted ants, birds, bats, spiders, crickets, grasshoppers, praying mantis, turkeys, and wasps as important natural predators.

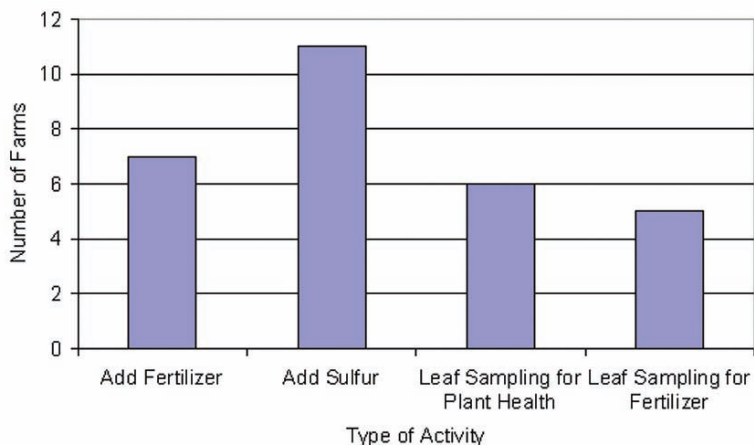


Figure 9. Plant management methods used.

Of the 32 survey respondents, 19 said they pollinated their fields. Of those, 13 respondents used honey bees, while six used bumble bees. Some respondents used both honey bees and bumble bees. Of those who pollinated their fields, five respondents rented hives—two from a Maine company and three from a company outside of Maine.

In terms of pruning, 30 respondents stated they mowed their fields (Figure 10). Of those respondents, 10 used a household lawn-mower (HLM), 15 used a tractor-pulled flail mower (TPFM), 11 used a tractor-pulled rotary mower (TPRM), and eight used some other method of mowing. Some respondents used more than one mowing method. In addition, 13 respondents burned their fields with hay or straw, and four burned with oil. Some respondents indicated they burned as well as mowed their fields. Of the 26 respondents who said they cut weeds, half cut weeds more than once per year, and some said they cut “constantly” or “continuously.” Nine respondents stated that they burned their fields to control insects or diseases.

All 32 respondents indicated they harvest the blueberries by hand, but five said they also mechanically harvest the berries. Eleven respondents hired non-family laborers to help with the harvest, and 15 respondents hired non-family laborers to help with other aspects of the operation, such as mowing, packing/processing, burning, and office work (Figure 11). Five respondents said they paid harvesters by the hour, and 14 respondents indicated they paid harvesters by the unit. The predominant unit was the quart, although some growers used field boxes.

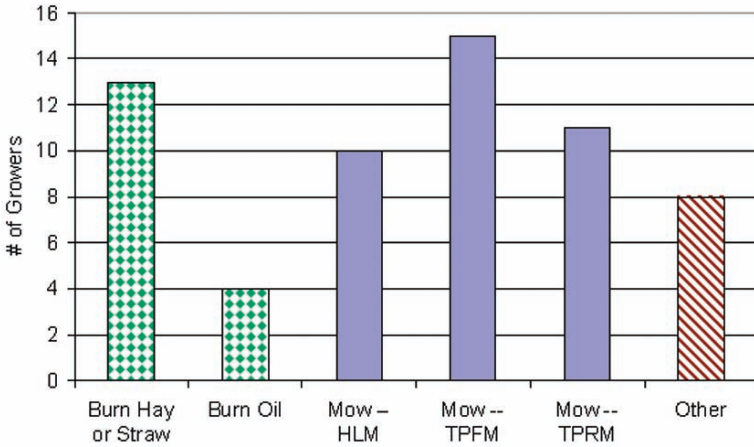


Figure 10. Methods of pruning.

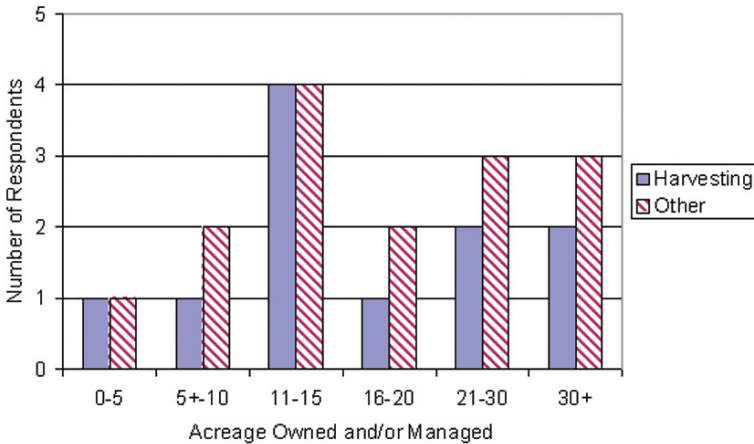


Figure 11. Use of non-family labor by farm size.

Thirty-one of the 32 respondents said they selectively harvested the blueberries from their fields; one respondent harvested the berries all at once. Eleven of 29 growers did not harvest 100% of the crop in 2006. Reasons for not harvesting the entire crop included “frost,” “lack of rakers and marketing ability,” “poor pollination and/or loss to wildlife,” and “too low yield to warrant employee expense.”

In terms of marketing the harvested blueberries, 14 respondents sold a portion of their berries at a farm stand, 10 respondents sold

via a pick-your-own operation, 15 respondents to retail stores, three respondents to a freezer, three respondents to a processor, and 17 respondents through some other market channel (Figure 12). Examples of these other market channels include restaurants, bed and breakfasts, farmers markets, wholesalers, community supported agriculture operations, and personal use. Although six respondents indicated they used just a single marketing channel, most respondents sold their product through more than one channel.

Fourteen respondents produced some sort of value-added product, such as tea, jams/jelly/spreads, frozen blueberries, fruit leather, dog biscuits, skin care products, juice, butter, syrup, compote, and blueberry yogurt.

Methods of Learning

To improve their farming practices, growers used several different sources and methods to learn about blueberry production (Figure 13). Growers used hands-on learning (all respondents), other growers (29 respondents), Cooperative Extension (22 respondents), trade journals (five respondents), and other sources (six respondents). Examples of “other sources” listed by respondents included MOFGA, Internet, ecology texts, and trades shows.

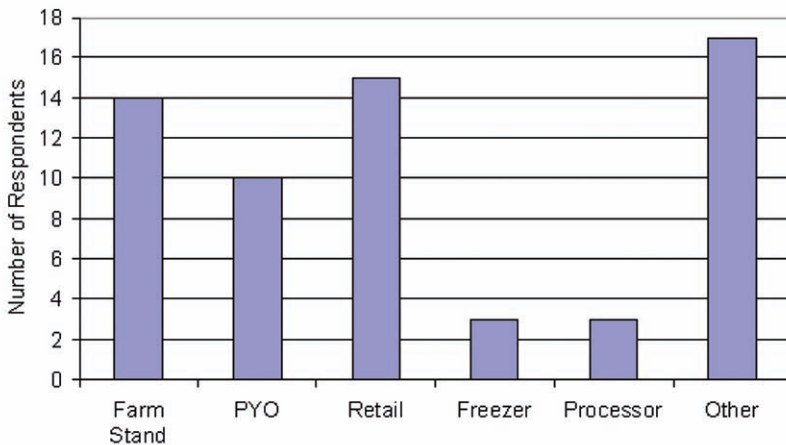


Figure 12. Market channels. Most respondents market in more than one channel.

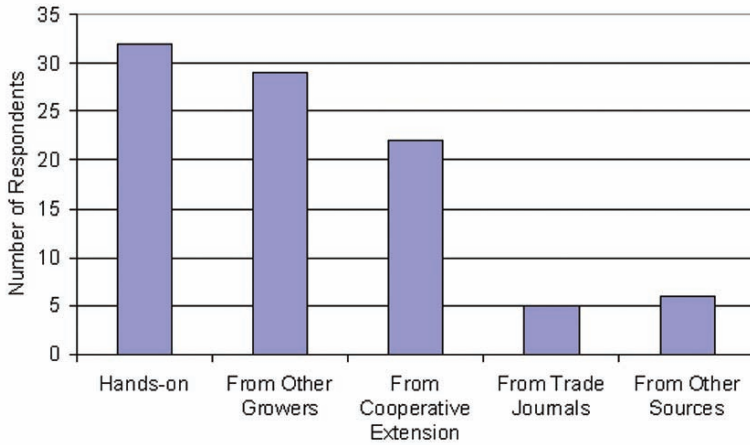


Figure 13. Means of learning about blueberry production.

CONCLUSIONS

Although some people perceive organic blueberry production as a commodity operation where all growers use the same practices and market their product through the same market channel, the 2006 Organic Wild Blueberry Growers Survey found this is not so. In some aspects of their operations, there is almost complete uniformity among growers, such as pruning and harvesting methods and selectively harvesting berries. In other aspects, however, there are distinct differences between operations, such as their market channels, the acreage owned and/or managed, and the use of non-family labor.

In addition, the survey found that although the average age of respondents is 54 years, there is a wide range of ages (25 to 74 years) among the growers. Given the average age of respondents and that the predominant relationship of the respondents' farming partner is a spouse, the organic blueberry industry may face problems in maintaining the management of the current number of acres. However, organic blueberry production may be more appealing to individuals entering the industry since a vast majority of respondents grow organic blueberries on a part-time basis and most respondents also work off the farm. It appears that few people expect, when entering the business, that an organic blueberry operation will entirely provide a person's livelihood. Instead new growers think that they can gradually work their way into the business.

ORGANIC CASE STUDIES

Summary

In 2007, as part of a larger multi-year project investigating organic pest management strategies for lowbush blueberries, we interviewed five individuals (or couples) who grow organic lowbush blueberries. Based on those interviews, we wrote a case story about each of the five organic blueberry operations. These case stories are intended to provide real-world examples to those already in the business of growing organic blueberries and to those considering getting into the business.

Although all five individuals/couples grow organic blueberries, there are many differences between their operations. In terms of location, one is located Downeast, two are located in Hancock County, one in Waldo County, and one works in a number of counties in western Maine. When it comes to the harvest, more than one couple tries to do all the work themselves, whereas another grower enjoys hiring local youth to help with the harvest, and another grower forms a cooperative of sorts to harvest and market the berries. As for marketing, four of the five sell fresh product, but four of the five also have one or more value-added products. The value-added products include frozen berries, jam, fruit leather, blueberry tea, and dog biscuits. Most sell their product directly to the consumer, but a number also sell to retail stores and over the Internet. Four of the growers own their own land, but one grower primarily leases or manages others' land. Although some people see organic blueberries as a commodity with little difference between the operations, we hope these case stories will show that there is great diversity within the organic blueberry industry in Maine.

Our Blueberry Farm—Jane and Jon Doe, Downeast, Maine

Jane and Jon Doe bought their blueberry farm in late 2000. The farm had been commercially managed by one of the large blueberry processors in Downeast Maine for many years prior to the purchase, and the Does continued to allow the processor to manage it for a few years after they had bought it. The farm consists of about 20 acres of blueberry land, 10 acres of grassland, and the rest is cutover woodland. The 20 acres of blueberry land is split among three fields, with one year's harvest acreage being a little more than 10 acres and the next year's harvest acreage being a little less than 10 acres. In addition to the acreage, the Does have built a new, modern processing building where a portion of the harvest is cleaned and processed.

Phases of management

The Does have gone through roughly three phases of management of the blueberry operation in the six years that they have owned it. The first phase was letting the large blueberry processor manage the acreage, which lasted for two years. The Does ended that arrangement primarily because of the financial cost. In the second phase of their management of the blueberry operation, the Does managed the acres themselves using conventional blueberry-growing practices. In the third and current phase, they are managing the fields themselves organically. As Jon and Jane reflect, “We certainly went through a season or two with the Velpar®. We both got our pesticide licenses...certified applicators...but our decision to go organic was really more an emotional one than a commercial one or judged financial one in any particular sense. It seemed the right thing to do.”

Production

Having managed their acreage conventionally for a few years, the Does were able to adequately evaluate the pros and cons of transitioning to organic production. For the Does, production concerns, up to now, focus on mummy berry and Botrytis, and weeds. As Jon notes, “We have two challenges. One is [mid-May to mid-June]—getting through pollination without succumbing to Botrytis or mummy berry. And the other one is just weeds. We don’t have much a fruit fly problem.”

Although weeds are one of the two big production issues for the Does, Jon seems to have a management plan in place. “Weed pressure is a big problem. We need to get pH down; it’s really the only thing we can do. That’s high on the list—to get sulfur down. It’s not down as low as it should be by far. It’s running about 5.0 or something.”

Mummy berry and Botrytis are the bigger concerns, however. According to Jon, “Last year we had a dreadful year. We only had 13,000 lbs on the same cycle that [the large commercial processor] in a bad year had 33,000; we’ve had 25 or more [thousand lbs] ourselves. And that was because from about this time it got wet—kind of like it is now—and stayed that way for the next month.” Things had actually looked promising last year prior to the wet weather. As Jane notes, “We had tons of blossoms. Tons. The best blossom we had ever had. And afterwards they were gone. The bees didn’t pollinate them.”

When the harvest does finally arrive, what is involved? The Does hire local rakers, but the process is slightly different from how it is

on most blueberry fields. As Jane and Jon describe it, “We ask the rakers to go around clones that aren’t fully ripe. Sometimes they do. Sometimes they don’t. It goes against the raker’s grain because that whole decades of experience around here...we don’t string [lines for rakers]. And that has taken them a while to accept.”

In addition, the Does have bought a mechanical harvester, a walk-behind machine with a picking head, to allow them to do more of the harvesting themselves, thus cutting down on out-of-pocket expenditures. As Jon describes the harvester, “It’s extremely good and it’s extremely frustrating. It’s extremely good because the picking mechanism is very effective; it picks berries very efficiently. Its traction is woeful. So, on a perfect field it is absolutely great. You can fill a box in ten seconds. But we don’t have perfect fields.” To help them get more use of the mechanical harvester on one of their fields, they “spent a vast amount of money having rocks removed and leveled” since the last harvest. As Jon describes the rationale for the leveling, “then we should be able to use the harvester on that [field] and that, obviously, is just a way of reducing our cost—and getting more, in the end, into our own hands.”

Processing

“Our goal is to harvest slowly for a month and not to bring in a vast crew and do it all in a day. That wouldn’t do us any good,” Jon notes. Jane simply describes why doing it all in a day wouldn’t do them any good. “I can only run so many of them [blueberries] on my little [processing] line.” While the length of the harvest is related to the maximum throughput on the processing line, the reason they ask the rakers to avoid unripe clones is more quality related. “We just pick out a lot of stuff. I’m really, really picky, which is why we have, comparatively speaking to the other area people who run their lines, we have such a low output, because I’m really fussy—red ones, pink ones, they are all out. I just want the perfect berry,” Jane notes.

Marketing

Like many farmers these days, the Does have evaluated the local/farm stand market. With so many roadside stands in the Downeast area, many consumers are unaware of any distinction between conventionally and organically raised blueberries. But value-added products may have a market. As Jon notes, “I think in terms of the fresh market around here, the farm stand market, you can’t really charge more for an organic berry. There is a presumption that people are buying a farm fresh berry and the distinction is quite lost. So, no, I don’t think there is a higher price that can be

extracted. When you get a packaged, frozen product into a high-end store than, yes, no question.”

For the Does, the value-added market is part of their marketing strategy, which includes fresh berries, frozen berries, fruit spreads (i.e., jams), and field berries (i.e., berries that have been harvested but not cleaned or processed in any way). As Jane notes, there are some limitations to selling value-added products, “Transportation is a real problem. There aren’t that many high-end stores up here that people will pay that kind of money for because everybody knows somebody who’s got a blueberry field up here. So, you have to transport it away, somehow, and that costs a lot of money along with the freezing and storage costs, which have just gone sky high. We just got a new bill for the coming year. So that will affect everything.”

Of the total harvest expected in 2007, about 40% are processed to be sold as fresh or frozen berries, or made into fruit spreads, while the remaining 60% are sold as field berries. The priority is in ensuring there are berries for the processing line, and then the overage is sold as field berries, for which the Does have a regular customer. As Jane and Jon describe it, “I can only run [on the processing line], tops, in one season about 7,000 lbs of finished product. That’s about 10,000 lbs of field boxes. That’s if we run our line eight hours a day for 25 or 30 days flat. And we try to do that. It’s a manic month. If we have a harvest which is two or three times as much as that, which in a good year we can do here, then we have to sell the bulk as field berries or get someone else to process them.”

In terms of the frozen berries, being located near a commercial freezer is helpful. “That is one of the real conveniences of here. Each day we can take boxes in there, to the freezer, and they get safely stored away,” Jon notes. The berries are then frozen and stored by the commercial freezer. The Does retrieve berries as they need them. Having family and friends in high-population areas, such as Massachusetts, where the Does visit regularly, they view as a benefit as well. As Jon and Jane describe it, “We have various outlets at the moment ranging from a farm store [in central Maine] to a very upscale place down in Massachusetts...so every now and then—usually six weeks or whatever—I’ll take a trip down. We fill up the car with great big coolers and stuff them full with 1-lb bags and go to the store in [Massachusetts].”

The most gratifying of all the marketing approaches that the Does undertake is the fruit spreads (i.e., jams) that Jane makes in their licensed kitchen. As Jane describes it, “I use 500 or 600 lbs of blueberries...I use a lot more raspberries [which are bought in]. I take out a lot of seeds. I use about a pound of fruit for every 8-oz.

jar.” Taking into account the different varieties of spreads, Jane makes a total of about 2,000 jars a year. So far the demand has been greater than the supply. “This year I’m trying to make things ahead of time, so I don’t run out again,” Jane notes.

Analyzing profitability

Jon and Jane work hard at their blueberry operation, but they tend to take a practical approach to tracking their income from the farm. The goal with the farm is to try to have fewer and fewer out-of-pocket expenditures and to use more and more of their own labor. As Jon describes it, “To the greater extent that we can use our own labor, which is why we spent the money leveling the field, so that we can get down our harvesting costs. The way that we choose to do it, and many people chastise us for it, but we don’t cost our own labor when we figure out what a pound of blueberry costs us. What we do is we say ‘as far as what we’re concerned at the end of the year, or the month, or whatever, any money we’ve made is what we’ve been paid for our labor.’ That seems the more practical way of doing it. If we sat down and said we wanted to charge our own labor at \$15 an hour for field work, \$25 an hour for thinking work or something, we would simply prove to ourselves that the whole thing was completely nonviable.”

Helpful resources

As the Does were relative novices to blueberry production when they bought the farm, they did not waste much time seeking out people with expertise. While conventional growers, they joined the Sunrise County Wild Blueberry Association, which is a marketing cooperative, but which also provided them with some valuable production expertise. “[Joining Sunrise County Wild Blueberry Association] was a good way of sort of learning about the business of raising blueberries and marketing blueberries and meeting a lot of valuable people. And those connections are actually, and obviously, very valuable,” Jon notes.

Since switching to organic production, the Does have continued to seek out expertise. Now that expertise and advice tends to flow from the Maine Organic Farmers and Gardeners Association and the University of Maine. As Jon recollects, “The fact that Frank [Drummond and everyone at the University] is working on this [Organic Transitions] project was part of the impetus for us to believe that we weren’t being entirely irrational because there was a group of people who were actually thinking about the problem we were setting out to address.”

Going organic

For the Does, going organic was not about getting rich. As Jane describes it, “No, you don’t become organic for the money. It’s purely to get rid of the chemicals because they’re so harmful. I don’t know how anybody can become organic for financial gain. It’s just so much work...and you lose so much. And yes, you can charge more for organic, but then you’ve got someone like [the farmer] down the street who says ‘organically grown’ or however he puts it [when actually he does use chemicals].”

Even given the hard work and the questionable financial return, however, Jane is enjoying the experience. “I just love it. I really love it—every part of it—the weeding and...I kind of wish I didn’t have to spend the whole month of August in that [processing] building. I miss going to...we have a cabin on a lake inland...and we’ve seen it so much less...but anything else I just love. I just love it. I love the people; they’re great people, helpful. It’s all great, I think.”

Jon enjoys the experience, but parts of it are still a bit stressful for him. “I enjoy it. I can’t be as joyful about this as [Jane] can. I wish I could. The reason is you say, ‘I enjoy the weeding.’ Yes, I don’t mind doing the weeding, but as I’m doing the weeding I think, ‘I can’t possibly get this field done by the end of the month.’ The enormity of the task hangs over me and I feel that I’m failing to do what I need to do. And I don’t enjoy feeling like that and I don’t have a cure for that.”

Highland Blueberry Farm—Theresa and Tom Gaffney, Stockton Springs, Maine

Highland Blueberry Farm has been a family-owned farm since 1988. The farm was purchased by Tom Gaffney and is primarily operated by his wife, Theresa, their five children and Theresa’s mother. The farm consists of 22 acres of blueberry land and 64 acres of woodland. Roughly 11 acres of the blueberry land are harvested each year. In addition to the acreage, the Gaffney’s have built a new building to adequately handle their processing, freezer, and office needs.

Phases of management

The Gaffney’s have gone through a number of phases of management as the farm evolved to its current level of operation: owning the land with someone else managing the land conventionally; managing the land themselves while transitioning to organic, but selling the berries primarily to a processor; managing the land organically

and marketing the berries themselves seasonally; and managing the land organically and marketing the berries year round.

Prior to 1999, the blueberries were managed conventionally by a regional blueberry processor. In 1999, when the Gaffney's decided they wanted to manage the land themselves, they continued to take the berries to the regional blueberry processor that had been managing the land up to that point. "But in 2000", Theresa notes, "we decided maybe it would be nice to try to sell blueberries ourselves and not just always take them to [the regional blueberry processor]."

They decided to go organic in 1999 and received certification in 2002. During the three-year transition, the Gaffney's slowly started their fresh market operation although most of their berries continued to go to the regional blueberry processor until 2003. After the farm was certified organic, the Gaffney's put more time and energy into selling their berries to consumers although they did sell to restaurants, retail outlets and co-ops. In 2004, the Gaffney's moved the processing operation out of their garage and into a new building they had built. They also bought a commercial 9-foot by 12-foot walk-in freezer, so that they could freeze berries and sell them year round.

Pest management issues

As transitions go, their transition from conventional to organic blueberry production has been relatively painless. Theresa attributes most of that to location, "I think we are in a pretty unique spot just because we are on a slope on a hill, we get the fog from the coast...so, we get a little bit of moisture. We don't dry out as much as maybe some other fields that need irrigating. We're surrounded by the trees so we have good natural bee populations—not only honey bees, but bumble bees." The Gaffneys main problems consist of blueberry maggots (or "worms"), pH, weeds, and overall management.

With regards to blueberry maggots, or "worms" as Theresa likes to call them, she notes, "I find that because of the area that we're in, we have tremendous winds up here, if we're going to have the worms in our blueberries, it's going to be closer to the forest line." If she gets worms in part of the field, Theresa doesn't harvest from that part of the field. She notes, "If I find an area, I stay away from it. That's how I deal with that. Usually, it's a minimal, pretty-much-contained area. It's one trouble spot up in the corner that's pretty much surrounded on three sides [by trees], and I just look for worms and stay out of there if it's really bad."

Theresa believes a lot of the issues in organic production are tied to pH—how acidic the soil is. “And really I think the biggest challenge for blueberry growers, organic growers, [is] keeping the pH low,” she notes. Research by the University of Maine is beginning to indicate some connections between pH and weed growth, and Theresa is glad that that research is being done. “I’m really excited to see the research that Frank [Drummond] and Dave [Yarborough] and the rest of the team [at the University of Maine] [are] doing because we think it is really important to look at.”

Weeds are something the Gaffneys are just learning about as they have only been out of a spray cycle for a few years. Their approach is “clipping the trees and keeping on top of the weeds.” But getting rid of all the weeds is not the goal. As Theresa describes, “I don’t mind if I have a few more pollinating flowers and plants out there in the field. I really don’t because I realize the benefit that that has to the bees.” Theresa is aware, though, that it has not been very long since the field was managed conventionally. “So, I have a few more grasses out there. But I’m not sure how bad that’s going to be, the further we get on in not applying chemicals.” The organic certification inspectors used to say to Theresa, “Wow, your fields look so great. I wonder what will happen when there’s no more chemical residue in the fields. What’s going to happen then?” And Theresa now has a better understanding of what the inspectors were referring to. “I know what they’re talking about now. I see it. It’s coming. It’s happening. So, we have to get a little more aggressive and we have to be a little more vigilant about testing a few things.

In terms of burning or mowing their fields, the Gaffneys have transitioned this aspect of their farm as well. The regional blueberry processor used to burn the fields for them, until the Gaffneys stopped selling them the blueberries. At that point, they had to decide whether to burn the fields themselves or to start mowing, and it came down to a financial and safety issue. “It became very expensive and really was not affordable for us. So, we bought a tractor...with a flail mower and we mow fields,” Theresa remembers. With outdoor fires, Theresa explains, “it’s the winds that are a problem up here. So, we were afraid that things were going to get out of control for us...then, do you have enough people, enough crew, enough water. Are you going to lose your house or your neighbor’s house?”

Production issues

Unlike many farms, labor is not much of a concern for the Gaffneys. In fact, one of the primary reasons they began manag-

ing the blueberry land themselves is because they did not care for the influence that older blueberry rakers had on young workers. As Theresa remembers, “our oldest son went to work for a local harvester and it was the first time that he ever smoked a cigarette or had a drink of hard liquor. And as parents, you don’t want your very young teens exposed to that.” In addition, the Gaffneys were aware of what went on when the regional blueberry processor’s crew would come to the farm. Theresa notes, “a lot of the things that were going on when crews would come is a lot of things that we just really didn’t want our family exposed to. We didn’t want the drugs, the alcohol, the smoking, and the swearing. We just didn’t want that around our family.”

So, the Gaffney’s decided to create a place where young people could be able to work and earn some money. As Theresa recalls, “as we began really tapping into some of our area churches and our home-school group, parents were more than delighted to send their young people here to work for the summer because they knew that that stuff wasn’t going on.” Now, their crew is predominantly teenagers although family members work as supervisors, and Theresa hires some women from a local Christian residential rehab facility to help with some work during the non-harvest season.

Theresa has learned that older teens are the ones best suited to work in the processing room, but children of a range of ages work in the field. Theresa pays them by the hour when they start in the field until their skills get to the point that they are able to make more money being paid by the box—usually only a couple of days, at most. As Theresa notes regarding having a safe workplace and using local teens for labor, “I never have a shortage of workers. I pay them well because I am able to get a good dollar for my berries.”

Marketing approach

There are two key aspects to the Gaffneys marketing of their blueberries—having product available year round and bringing customers to the farm. As Theresa notes, “not only were we doing fresh pack, but [with the walk-in freezer] we could have berries throughout the year and our name would still be remembered by folks.” Initially marketing the berries was not rocket science for the Gaffney’s. “The way we started out is just really word of mouth,” Theresa recalls, “and we realized it was to our advantage to get people to come here to the farm—to actually see what we do, how we do it, where we live, where does their food come from. We realized that that was a very valuable component to being locally grown food.”

What started as word-of-mouth advertising has now grown into an effective system of mailing reminders to customers in early July. “I will send out a post-card about three weeks before the harvest—when I expect the harvest to be. The postcard will say to them, ‘this is what you bought last year,’ ‘this is what the price is this year,’ and it will list my phone number and e-mail and ‘please phone us with your order or e-mail us.’” Having tried different types of advertising, the Gaffneys find that this has worked the best for their operation. “This has been my best form of advertising because they keep the postcard somewhere, or they forget who I am or how to get a hold of me, and ‘voilà,’ in the mail comes this postcard and all the information’s right there...I just keep a list and I call them as the order is ready—first come, first served.” Although the Gaffneys have some customers to whom they deliver—individual consumers, retail stores, restaurants—those customers pay a higher price for the berries than do those who come to the farm.

Value-added processing

The Gaffneys realized early on that adding value to their blueberries could help to make the farm viable while also providing opportunities for year-round work for the family and others. Initially, as part of a Farms for the Future Phase I grant, they started investigating making blueberry juice, but because life events got in the way, that plan fell to the “back burner.” Then in 2004, Theresa began wondering if the beautiful red leaves of the blueberry fields in the fall had any value. As Theresa notes, “I know that when my grandmother used to make raspberry jam, she’d always throw raspberry leaves in it—it was medicinal. You always found a raspberry leaf in raspberry jam. And so I’m thinking, ‘what about blueberry leaves? Blueberries are great for you. What about the leaves?’”

Fortunately for the Gaffneys, they happened to ask that question of Kristi Crowe, a researcher from the University of Maine. Through the assistance of Dr. Crowe and a local high school science class, the Gaffney’s learned that blueberry leaves have a higher level of antioxidants than do the berries themselves. From that finding, and with the assistance of many individuals and organizations, the Gaffneys began working to develop an organic, whole-plant blueberry tea. They first began production of the tea began during fall 2006 and have marketed it locally since then.

Recommendations to others

Theresa has put a lot of time and energy into developing the blueberry operation, and as most innovative and energetic people do, she has recommendations for others. First, she notes, “There

are so many knowledgeable [people]...so, finding those experts and getting information is helpful.”

Theresa includes herself and her husband, Tom, in the list of people with whom others should talk. “It’s about those farmers who are willing to share and be transparent and be open. We’re very duplicate-able and that’s what we wanted to do. We want to be able to establish a system here and be able to invite others to come, and say, ‘Look, here, you can do this.’”

The Gaffneys started out small, and Theresa recommends to others, “I would highly recommend anybody who is going to do this, ‘don’t bite off more than you can chew.’ Just do one thing, do it really well and grow. And keep growing and diversifying.”

In terms of the hard work and risks involved, Theresa offers these thoughts, “be in it for the long haul, be willing to work really hard. Ask a lot of questions and be willing to try, because...we invented these rakes that we thought would just work wonderfully...and it failed miserably. It was wonderful to do that. We laughed a lot, we cried a lot, but we didn’t give up. We just worked very hard. It’s been worth it.”

Arthur Harvey, Hartford, Maine

The typical image of a farmstead includes a farmer (or farm family) working various parcels of land in close proximity to the house and outbuildings to raise crops or livestock. Arthur Harvey is taking a slightly different approach to growing blueberries. Although he does own some blueberry land, most of the land he manages is leased or there is some other management arrangement that allows him to harvest the berries. While the land for the typical farm is all in close proximity to the farmstead, the land Arthur manages is spread out across western Maine; some of it is more than one-and-a-half hours away from his home. In addition, most farmers hire labor during the growing season and pay them an hourly or some other rate. In Arthur’s operation, there is a harvesting and marketing crew that sign-on for the entire season, and the crew splits the proceeds of their efforts at the end of the season, based upon an agreed upon formula.

Background

Arthur Harvey started out as a blueberry picker in the 1960s, working for two cents a pound. Around 1970, he had the opportunity to sell blueberries off the land because the owner could not afford to pick it. Eventually he bought the land from the owner. As Arthur recalls, “I enjoyed the work and had friends that wanted to

come along and do it too. I also knew a lot of college students and recruited from that crowd.”

While Arthur manages blueberries organically, that decision initially stemmed more from economics than it did from philosophy or ecology. As Arthur describes it, “When I first got into the business a little over 30 years ago...I took over a field that had been chemically managed...and we started with chemicals/insecticides. It didn’t seem to make much sense to pay money to get rid of a few bugs...so we stopped using them...and we pulled weeds by hand. Then I learned about the organic movement and started to learn how to manage organically. And we still pull weeds by hand.”

Land management

Arthur manages or leases land, entering into a number of different agreements. For extremely productive land, Arthur may enter into a 10-year lease, where the landowner is paid \$1,500 per year. Most blueberry land, however, is not worth that much. For the management of land owned by a municipality, Arthur pays the municipality \$1.20 per quart less any credits that have accrued. Credits accrue to Arthur in the amount of \$300 for every acre that he mows or weeds. There are similar arrangements with families for whom Arthur manages land; mowing and weeding of the land accrues credits, which are applied to the royalties paid during harvest.

It is unusual for a grower to manage blueberry land spread out more than one-and-a-half hours driving time, but there are some significant benefits—namely, pest management and season extension. The fields being spread out so far greatly reduces the risk of an entire crop failure due to pests and diseases. Instead, if there are any outbreaks, the losses are localized. Also with the distance between fields, there are a variety of clones and microclimates that vary the ripening/harvest dates for the berries in the different areas. Thus, Arthur’s season can be extended more so than for acreage that is all in one area. Another benefit is that Arthur can choose to give up on a field and not manage it. “I’ve worked on 30 or 40 different blueberry fields over the years. Some fields are ‘a pain’ and you give them up and find another one,” notes Arthur.

Production issues

Mummy berry is usually a minor factor on Arthur’s fields; weeds and flea beetles are also problems at times. Flea beetles are actually more of a problem than mummy berry. Regarding flea beetles, Arthur notes, “I don’t manage them; I try to be patient. With flea beetles, we just wait until they die out—it goes in cycles, I guess.

There are things to spray, but they are expensive and require too much oversight for them to work for us.” For mummy berry, Arthur has used effective microbes to try to improve the microbes in the soil.

With the arrangements that Arthur has with landowners, it is the landowner who is responsible for the burning and mowing of fields. When he does have to mow, he uses two heavy-duty lawn mowers that fit onto the roof of Arthur’s car. Mowing three acres takes roughly nine hours for two people (including equipment malfunction, etc.). The mowing helper gets paid at a rate of \$15 per hour plus mileage.

Marketing and harvesting

Whereas a number of growers sell off the farm in coastal and Downeast Maine, Arthur sells exclusively to retail stores in the greater-Portland area. For Arthur, “The marketing is the easiest part. There is a large unfulfilled market [in this part of the state]. Just take them to retailers and they snatch them right up.” But Arthur notes that not every retailer is suitable to sell blueberries. One has to find the right retailer(s), but there are plenty of them in that area. In addition, the retailers appreciate the long season.

The long, eight-week harvest/market season is due to a number of reasons. As Arthur describes it, “The longer harvest is due to geographic separation of fields, different varieties and selective harvesting and multiple harvesting from the same field. We generally have to pick a field three times to get them all. We are working four to six fields during the season. To start in a field someone has to scout it first to know that it is ready. The rule of thumb is you always go to the field where the picking is the best.”

Arrangement with the crew

Arthur’s decision to make the harvesting and marketing crew a cooperative, profit-sharing enterprise stems from the difficulty he has with the traditional management vs labor scenario. For Arthur, this traditional scenario causes too much tension and distrust. As Arthur recalls, “The first year I hired people and I found I had to watch people all the time and I did not like that. And some of them were my friends and I didn’t like that—intolerable.” As a result, he has moved over the years to a cooperative arrangement with the crew.

Before the cooperative is able to split up the profits, there are a number of expenses that are paid “off the top.” These include blueberry royalties, mileage, the services of a bookkeeper that updates records daily, overhead/equipment, and a fee for wear and tear on

Arthur's equipment. Once these expenses are taken off the gross profits, the net profits are distributed to the crew members based upon a formula.

Each person on the crew takes on one or more responsibilities during the harvest/marketing season, so at the end of the season, it is relatively routine to divide the profits. A person has to stay on the crew throughout the season to obtain a share. And those shares are divided by an agreed upon formula. In a recent season, the profits were dispersed to a few of the tasks as follows: raking, 43%; delivery, 13%; sales manager, 3%; and quality control, 2%. As one can imagine, operating a business in this fashion takes detailed recordkeeping, and Arthur affirms this when he says, "We keep scrupulous records."

The crew itself is made up of family (a wife and two children), plus local people and friends. The profit sharing takes place at the end-of-the-season meeting. Only those who stayed with the crew through to this meeting are able to receive any of the profits, although the people there might agree to give those who have left some compensation. This meeting is where any changes to the percentages are made. These percentages can only be changed by unanimous consent of the crew.

Advice

If somebody wanted to learn how a cooperative-style blueberry operation works, "the quickest way," according to Arthur, "would be to join our crew." But, Arthur points out, that requires a season-long commitment. In addition, Arthur is not sure this type of arrangement works for everyone. "I think if a person did work on the crew for a season, they may realize it's more than they are up for—at least in terms of managing it on their own." This realization that cooperative blueberry operations are not for everyone may stem from the fact that other people have tried to replicate Arthur's model in other parts of Maine, but they have been unsuccessful. Even though the cooperative business style may not work for everyone, there may be opportunities for people to use a conventional business model to lease and manage dispersed blueberry land throughout Maine. As Arthur notes, "There are thousands of fields that used to be commercial and are abandoned. Many owners would be appreciative of someone if they would take care of them."

Gramp's Farm—Holly and Tom Taylor-Lash, Orland, Maine

Holly and Tom Taylor-Lash have been growing and selling organic blueberries for 15 years. And while they don't harvest as much as they did in the past, they are still looking at ways to streamline their 16-acre (8 acres in harvest and 8 acres in prune) operation.

Harvesting

Holly and Tom try to do all the work themselves although they have two young children who are becoming experienced workers. Because of this, Tom and Holly are able to spread their harvest out over six to eight weeks. "We usually do eight weeks, but if you could do six weeks, 500 lbs a week, and barring weather and all...that's not a bad amount," Tom notes. Although the most the two of them have harvested and processed in a year is 5,000 lbs, nowadays, with two children with whom they want to spend some time during the summer, they harvest about 2,000 lbs a year. As a result, they do not harvest everything, just the prime areas. So Tom is quick to add that for them, "It's obviously just a part-time preoccupation."

One reason Holly and Tom are able to spread their harvest over so many weeks is that they process the berries the same day they are harvested. Since there are just the two of them to do the work, this limits how much they harvest in a given day. This processing situation has also helped them to develop a marketing approach for their berries. As Holly describes it, "Rake the berries you think you can sell in a day, and anything you don't sell that day, either reduce them the next morning at half price or freeze them or make jam out of them or do something else, because it's holding them over and having them get marginal that'll keep people away."

Control over the raking is the secret to getting good processing berries, according to Holly. It is very difficult to winnow them when the berries are wet—from dew, rain, or being broken while in the boxes. So, in terms of harvesting and processing berries, Tom and Holly are very careful with the berries. "We process them dry, we rake them carefully, and they go into quart containers [in the field]. And so, they already look pretty good just coming in from the field. And then they're winnowed out of those boxes, one [box] at a time, and when they are on the pick-belt they're not all wet and nasty," Holly notes.

Holly and Tom process the berries on one of the original MOB (Maine Organic Blueberry Cooperative) winnower/pick-belts. Tom says about the winnower/pick-belt, "They've basically got a blower and there are belts and runners and fans that blow all the chaff out the back. But then the pick belt, that's where the money is

made. So, anybody with a blueberry operation that's selling fresh pack needs to have a winnower/pick-belt machine, this is where the money's made right here."

Marketing

Since Holly and Tom have been at organic blueberries for 15 years, they have been able to fine-tune their marketing approach. It is to the point now where they sell everything they harvest. Tom explains, "We've reached the point now after 15 years that when we go out and rake berries, every berry is already sold." But it has not always been that way.

Holly and Tom started selling to retail outlets and to wholesalers in Boston, and realized early on that it's important when selling to retail stores to harvest early and get in the stores first. As Tom notes, "That's one of the reasons why we start early on, too. Anybody in the biz, as soon as those berries start to turn blue, and as soon as they're even edible—a little tart—but as soon as they're edible, you need to start raking those patches, because they ripen and get them into your market if you're selling them. Because the first one in is going to be there for the rest of the season."

After a while of selling to retail outlets and wholesalers, Holly and Tom soon realized that driving around for hours a day making deliveries cut into the time they were working on the farm. So, they began just selling product at the farm—with no, or very few, deliveries. Holly notes, "We tried to do a circle route to reduce our travel time. But we were spending an awful lot of time driving our berries around. When we finally got to the point where we wanted to increase what we were making on the farm, instead of raising our price, we just insisted that people stop by the farm and pick them up." As Tom describes it, "We don't deliver. Not to be pretentious, but it just got to the point where we were too busy processing." And the transition has worked for them. Part of the success is due to their marketing approach when they sold to retail stores. Tom and Holly are very quality conscious; their marketing motto is, "you never have a second chance to make a first impression."

To set themselves apart, Holly and Tom used a combination of approaches. One approach was branding and labeling their product. A business professor from the University of Maine encouraged Tom to brand the farm and their products. Tom recalls, "He said, 'you have a commodity here, everybody has blueberries, you know. But you're the only one who has Gramp's Farm Wild Maine Organic Blueberries. You're the only one in the world who can say that. So go with it.'" And go with it they did. They began labeling all their

fresh berry containers by putting a label on the clear plastic cover over the berries. In addition to keeping the berries fresher and cleaner, the clear plastic cover gave them a readily visible surface on which to place the labels.

The second approach was to date-stamp their product. As Tom notes, “We had a date stamp. Because if you’re going to sell and distinguish yourself, we put a date on there for a couple of reasons. One, to let the public know when it came in and let the store know how old it was, so they could rotate it. Because they get deliveries of berries everyday, and some of that stuff could just sit there for days; it just gets shoved to the back and stays there...when we delivered, we would look to see if they had any old product. And our rule of thumb was, ‘if it is three days old, we’d pull it.’”

This quality consciousness, which includes their marketing motto, the label and clear plastic covering, and the date-stamp, helped Holly and Tom to develop a customer base that was aware of the high-quality berries coming from Gramp’s Farm. This enabled them to more easily transition from a retail-store emphasis to a farm-only emphasis than if they hadn’t established themselves as growers and sellers of high-quality berries.

Another key to Holly’s and Tom’s success is living in a prime market area between Castine, Ellsworth, and Belfast. “Being in a location, as I’m saying, the ‘Golden Triangle’ here, has really been beneficial,” notes Tom.

Value-added processing

Another aspect of the production and marketing plan for Holly and Tom is the development of a value-added product. This development did not occur overnight, but was the result of some trial runs. For Tom, it is too difficult to compete with all the jams, jellies, and salsas on the market. So, Holly and Tom tried drying their berries, and bagging them, but the finished product was not very appealing. As Tom describes it, “They had all the aesthetic appeal of a bag of mouse droppings.”

Holly and Tom eventually came across the idea of producing fruit leather. Of the more than 2,000 lbs of blueberries Holly and Tom harvested in 2007, 400 lbs went to fruit leather, the most in any year so far. Other fruit, such as strawberries and cranberries, are bought-into the farm.

To help with processing the fruit leather, Tom constructed a “green” leather house. “This is where we evolved to, where we produce all the energy to dry the berries comes from flat-plate collector panels and all the electricity is generated from a photo-voltaic. In

just over two years, we've had almost 5,000 kilowatt-hours," notes Tom. Their equipment allows Holly and Tom to process 50 to 60 lbs of fruit a day. The fruit leather is a good fit for their operation because it is not terribly labor intensive; once the blueberries have been harvested and winnowed, and the slurry is made, the fruit leather dries during the day while Tom is doing other things. Having a processed product also helps with managing quality on the fresh-pack line. The berries that do not meet fresh-pack quality standards can be used to make fruit leather.

Another value-added product that Holly and Tom sell is frozen blueberries. They package frozen berries in plastic freezer bags—5 lbs at a time—and freeze them in their own freezers, although they have rented freezer space in the past from a nearby blueberry freezer.

In terms of processing and selling the frozen berries, Holly describes their operation: "We haven't been charging extra money for our frozen [berries] as long as they order them in season. What we did this year, if it's to our convenience that we do the berries a little at a time and freeze them, we don't give them any extra charge. And that really works."

Suggestions for newcomers to the industry

Since Holly and Tom have been growing and selling organic wild blueberries for so long, and since their operation has developed over that time, they have a few bits of hard-earned advice for newcomers to the business.

Their first piece of advice is for people to start in the wholesale market (i.e., selling to retail stores as opposed to directly to the consumer). Tom relates the advice to their own experience when he says, "Anybody starting out, I think, would start in the wholesale, assuming you can figure out how to winnow the berries. They would have to start figuring how to process and rake. That's probably the nut crunch right there. That, if not you, who? Grab a rake, buy a rake, find a rake, and get out there and see how much you want to produce. Now, for us, to do 100 lbs in a day is pretty much a good day. That's as much as we want to do. However, we've gone Downeast and we've done 200 or 300 lbs. Between the two of us, we can rake 300 lbs, in a day. That's a pretty good day. And we can do that in about six hours in field. So, it's not back breaking."

In terms of harvesting berries for their operation (i.e., an operation where they don't harvest all the berries), Holly notes that harvesting the best, easiest-to-rake berries first, and the rest

can be used for a “u-pick” operation, “Looking at our model now, I think now it’s good to rake the good berries first because you’ve got birds, you’ve got deer, you’ve got people. Anything can happen. So, sometimes it is good to go out and take the best. And then when you finally get tired at the end of the season, maybe that’s the time to have the ‘u-rake it!’”

Holly and Tom are also adamant about developing a value-added product in addition to fresh berries. As Tom notes, “Another lesson if you’re going to be in the blueberry business is to find yourself a product to make. Unfortunately, jams, salsas, and all that have pretty much been taken.” In addition to enabling an outlet for lower-grade berries, a value-added product can help to spread out the marketing season. As Holly reflects, “That’s the problem. That’s where you run into your biggest problem on the blueberries is that it’s a seasonal thing, but in-season you need to work all the time. And most people, what are they going to do the rest of the season. Unless they have a farm where they’re also doing vegetables and other crops and things like that. How are they going to make their money for the rest of the year?”

Off-farm employment

Holly and Tom are very experienced and serious about their blueberry operation although, as has been noted, it’s “just a part-time preoccupation.” As a result, finding off-farm work that provides sufficient income, but also allows them the flexibility to produce and sell blueberries, is important.

In one recent job as vendor representatives to a large retailer, Holly and Tom had a very flexible work arrangement. “We could go for an hour and we went in, got the job done as we needed to then. As soon as that job was done, we’re back here working. We just kind of weighed [the needs]. The next day we had the choice of let’s get up early and get out in the field while it’s cool. When it starts to get hot in the middle of the day, we would go over and work the store,” as Holly describes it.

Tom had also been working part-time, evenings for an outdoor apparel and equipment retailer in Ellsworth. He was able to arrange it so that he worked the closing shift, which enabled him to be on the farm most of the day, and then go into work in the evening. Recently, the part-time job in Ellsworth has become a full-time job, and the emphasis still seems to be to work evenings in order to free up the days on the farm.

Peaked Mountain Farm—Gail and Daniel Van Wart, Dedham, Maine

Peaked Mountain Farm has been in Gail Van Wart's family since 1868. The farm was commercially managed for blueberries through a lease agreement from the early 1950s through 2001. In 2002, Gail and her husband, Daniel, obtained title to the farm and decided to manage the operation themselves. While not originally intending to operate Peaked Mountain Farm organically, the length of time the fields had been out of production and the need for a pesticide applicator's license helped them to decide to operate organically. The farm consists of roughly 25 acres of blueberries split evenly between two fields—a front field and a back field. There are roughly 180 acres in all on the farm, with about 130 acres of that in woodlot.

Getting started

When Gail and Daniel first obtained title to the property, they were unsure how they wanted to proceed. Gail had grown up on the farm, but since the blueberries were leased to a commercial operator, she was unfamiliar with growing and marketing them. As a result, they applied, and received, a Phase I grant from Farms for the Future, which enabled them to work with an “excellent” team of professionals—“all the people that really had some expertise that would have taken us years to obtain.” As Gail and Daniel readily admit, it was not just the expertise of the team members that was so helpful, but also the many contacts that the team members shared with Gail and Daniel.

During the time of the Phase I grant, Gail and Daniel experimented with marketing their blueberries via a pick-your-own operation since they were unable to harvest them all themselves. This type of operation had minimal labor and equipment requirements, so fit the Van Wart's situation nicely. And while Gail and Daniel enjoyed having people, especially children, out picking blueberries, they felt the customers were keeping them away from what needed to be done on the farm. That is when they got into Phase II of Farms for the Future.

With help from Phase II of Farms for the Future, the Van Warts were able to establish a fresh-pack line in what was the family homestead when Gail was growing up on the farm. It has since been converted to the processing center and retail store and a newer house further up the mountain is now home to Gail and Daniel. With the equipment in place to process fresh berries, the Van Warts turned their attention to selling directly to the consumer.

Marketing

As Gail notes, “We started with the idea that we wanted to sell ‘em fresh,” although they were open to some sort of value-added product. A few things moved their approach toward value-added. One was the difficulty of selling a fresh product to the public; another was finding an old dog-biscuit cookie cutter they had used with their border collie, Preshus. The third was being awarded grant funds for a feasibility study for the dog biscuits.

Preshus was known for going out into the fields to eat blueberries, so Gail and Daniel decided to try making blueberry dog biscuits. They were unsure of whether there was a market for their product, however, so they applied to the USDA’s Value-Added Producer Grant Program and received funds for a feasibility study. With a new label printer, some local marketing, sales via the Internet, and Gail’s professional experience in marketing and graphic design, Gail and Daniel are now moving full-speed ahead into the dog-biscuit business. The blueberry dog biscuits are made throughout the year, and with the market growing for their value-added product, the Van Warts are aware that they may no longer be selling any berries directly to consumers. The goal with the farm, and with the dog biscuits, is to create a business where Gail and Daniel can hire some additional help. “If we can start hiring people to take some load off us on the harvesting end of things and the baking end of things, what we would like to do is to sit back and come up with the ideas to market them—the different ways to put them out there, the actual getting them out to the public. That is where we shine and that is what we would enjoy doing,” Daniel notes.

To help them along the way, Gail and Daniel applied for, and recently received, a second Value-Added Producer Grant, one that provides working capital for them to market their product in a broader way. One offshoot of the grant is that Daniel was able to leave his full-time, off-farm job to devote all his time to the farm. Another offshoot is that Gail and Daniel are planning on attending some dog-products shows to get the word out about their dog biscuits. Gail and Daniel are aware of how fortunate they are to have received the grants and cost-share funds that have helped them to get to this point. As Gail notes, “We’ve been very fortunate to have resources to tap into because we couldn’t have done it without it.”

Production issues

While Gail and Daniel have experienced few insect pests and diseases in their fields, they do have their share of weeds, especially grasses. The lack of insect pests and diseases is attributed to being

isolated from other blueberry fields, and the increasing amount of weeds is attributed to having a relatively high pH (about 5.2 before they put sulfur on). Daniel intends to fight the weeds primarily with lowering pH, though they do some selective hand-pulling and cutting throughout the season to try to kill off the heartier, more woody weeds like goldenrod.

Another method that Daniel is using to help control weeds is mulching around the edge of clones. Instead of burning brush and tree branches, Daniel chips them and then spreads that as mulch around the edge of clones. He came across this idea when trying to deal with a 100-year-old farmstead garbage pile. He decided to mulch over the garbage and the blueberries were able to come up through the mulch. As Daniel points out, “I’m taking the same theory in mulching the boundary of my clones, and keeping the grass down, and letting the berries come up through the mulch. Hopefully, this will work to some degree and combined with sulfur may actually buy me some time.”

In terms of pollination, Gail and Daniel have purchased some hives and so are now beekeepers, in addition to being blueberry growers. But they have found that they really enjoy the bees. “We weren’t going to [manage the bees ourselves] when we started...and then you get yourself a couple of hives and you get hooked. I mean they are truly fun,” Daniel notes. In addition, the raw honey sells quite well at their retail outlet. So, in addition to being useful to the crop and fun to do, the Van Warts also get a high-value product to sell. As is a lot of what goes on at Peaked Mountain Farm, the bees are part of a holistic approach. Daniel explains that, “[The bees are] not just supposed to pollinate blueberries. They’re supposed to have a little more varied diet. So, I’ve been thinking of different things I can plant around the border that will give them those blossoms and I can get rid of the goldenrod I hate. We’re working that angle. We’re going to put in a permanent apiary, so that the bees don’t ever have to move; they’ll always have a permanent home. And then vary their diet by getting more things in here, like rosebushes and things that they love. We can put those down around the pond down there, and on the backside, so that it’s a utopia—all encased in itself—the bees and the blueberries, everything works.” The new pond that the Van Warts put in recently with the help of funds from the state’s Agricultural Water Source Development Cost-Share Program is intended to help with irrigation, but, as it turns out, the bees like it, too. “As the pond was being dug, the bees were down there walking around the edges getting the water. They

know it's there; they like it. That worked out well for us. All these things work hand-in-hand," shares Daniel.

Planning for the future

While Gail and Daniel would probably not consider themselves "back-to-the-landers," they are extremely practical people. With 130 (or so) acres of woodlot, they have gone to heating their home entirely with wood. And in terms of electricity, Gail and Daniel have tapped into one of the benefits of living on Peaked Mountain by installing a wind turbine. As Daniel notes, "Now, all of the variables that plague older people as they get up and on their fixed income—they can't afford their heat, they can't afford their electricity, because it's changing, going up all the time—we've eliminated that. We've paid now to get rid of it later." Gail also notes, "We're becoming more self-sufficient and we're just trying to do what we can for the best of the land and to grow [the farm] into something that's sustainable for us and for the future."

One aspect of the future for Peaked Mountain Farm is the involvement of Gail and Daniel's children and grandchildren. Currently, one son lives with his wife and their two sons on a piece of the farm's property. The plan is for the other two sons to also move onto the farm within the next few years with their families. While there are no commitments in terms of the sons (and/or daughters-in-law and grandchildren) getting involved with the farm, Gail and Daniel are definitely setting things up on the farm to make it sustainable into the future. As Daniel notes, "We don't want to take the world by storm, we just want to stabilize it."



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