SUSTAINABILITY briefing

University of New Hampshire
The Sustainability Institute

Jordan's Farm: A Tradition of Family Farming

Jordan's Farm is a 160-acre family farm located in Cape Elizabeth, ME.

History

The Jordan family has been farming in the area for four generations. Penny Jordan grew up on the farm, and is one of four siblings who now run the operation together. Her father bought the property from an aunt in 1946.

Production

Jordan's Farm is a conventional agriculture operation. They grow mixed vegetables, and some fruit. They also produce compost and sell soil products, including mulch and aggregates. The farmstead is 160-acres of field and woodlot, but typically 60-70 acres are tilled during a season (some of which is leased from another farm in town). This allows for rotation with cover crops.

Jordan's Farm sells through retail and wholesale. They operate a seasonal on-farm market (which also purchases products from other Maine farms), and will soon be opening a yearlong retail outlet in neighboring South Portland, ME. They also have a mobile bus that serves as a traveling farm stand; with this bus they sell at senior housing sites and a few businesses. The majority of income is through the on-farm market, while the largest volume of produce is typically sold at wholesale.

Penny and her three siblings work full time on the farm. They also hire several seasonal employees, including skilled labor from Puerto Rico, retail workers, and workers to help with processing and packing.

Cape Elizabeth has a long history of farming. Jordan's Farm is one of only a handful of remaining working farms in the area.

Business Model

What is it like to work on a family farm? Working full time with all of your siblings can be challenging, but there are also many benefits. Penny says it works well because they all know the strengths, weaknesses, and idiosyncrasies of each other. "We know when each person is grumpy, and we know when not to work together!" Each sibling specializes in a different aspect of the farm business. Penny is involved in retail, wholesale, marketing, hiring, field maintenance, and harvesting. Her brother Bill is the farmer, and is responsible for field management, soil enhancement, irrigation, and production methods. Sister Carol focuses on the soil products, the

traveling farm stand, and processed foods. Finally, Penny's third sister Pam is the bookkeeper; no small task for a growing and diversified business!

Climate Impacts Seen

Penny has definitely noticed changing trends in weather, although finds it hard to define exactly what is different. She notes that Cape Elizabeth has traditionally had a mild climate, with cool nights and warm days. Now, the summers seem warmer. "Its hard to explain why, it just seems warmer," she says. "I wouldn't say its drier, it just feels different."

Jordan Farm's is among over 2,500 farms of a similar size in Maine, and almost 10,000 similar farms in New England, by acreage.[5] Half of all fruit and vegetable farms in New England report marketing via a Farm Stand on site. Jordan's Farm also joins the 22% of New England fruit and vegetable farms that sell directly to retail outlets, and the 17% of the sector's farms that sell a portion of their product at wholesale.[6]

She also notes that weather appears to change more rapidly. "Things seem more intense." Cape Elizabeth often has patterns of rain, fog, and heat during summer months. The farmers notice that they still see the fog and mists, but the drenching and drying of crops happens faster.

What impacts are seen in the plants? The rapid drenching and drying means that the crops are under more stress, and may be more susceptible to other diseases. However, the main change that Penny sees is with the lettuce. In the summertime, the lettuce does not grow as well as it used to. There are some varieties of lettuce that the family grew 20-30 years ago, but are unable to now because of the summer heat. In some cases, the lettuce grows, but the quality is decreased. The romaine, for example, gets powdery and bitter. "It doesn't taste good," says Penny.

Another change noticed by the farmers is that the growing season seems longer. Jordan's Farm already uses tunnels to stretch out the season, and this in combination with the longer season means they can usually have crops in the fields between April and December. Since 1970, the average growing season in New England has been increasing at a rate of 2.4 days per decade.[1] This trend is expected to continue, and possibly increase over the next century.[1]

As far as pests and diseases, Jordan's Farm has not experienced any problematic changes, but they are worried about tomato blight. Late blight in tomatoes is caused by a fungus-like organism that thrives in cool, moist weather.[2] This means that increased rain and fog could increase pressure from blight. However, hot and dry weather can be an effective control,[2] so it is unclear how the presence of this disease will change in the future. For now, Jordan's Farm has not been affected by blight, but they know other farms that are dealing with it.

Response

Greens are an important product for Jordan's Farm, and as a response to the new climate pressures, they are experimenting with different varieties of lettuce. Currently they are trying some slow bolting lettuce varieties to see if they do better with the summer heat. Bolting, when the plant forms flowers and seeds, makes the crop bitter and unpalatable.[2] It is unknown exactly what makes lettuce bolt, but experiments have shown that temperature is one of the factors.[2]

Penny says that they also find themselves irrigating more than in previous years. This addresses the heat and the rapid drying of crops and soil. Sometimes they will irrigate lettuce in order to give it the cooling effect of evaporation. "We find ourselves irrigating more even after it rains, because it dries out so fast," says Penny. This can help the lettuce as well as other crops. Luckily, water is not a problem for Jordan's Farm.

As a conventional farm, the Jordan family uses pesticides to control insects and diseases. However, they worry about the collateral damage of using too many chemicals, such as the impact on pollinators and the possibility of pests and weeds developing resistance. They try to spray during certain times of day when there are no bees present on the crops.

Challenges

One of the main challenges for Jordan's Farm is keeping up with demand. Being close to the urban center of

The Farm Stand at Jordan's Farm sells products from other Maine farms as well in order to supply a greater variety of food to their customers and support local farms and businesses. Penny notes how it takes four siblings to run the farm, while their father managed to run the operation on his own.

Portland means that Jordan's Farm has good access to markets. In recent years, the demand for local products has increased greatly, and often the farmers will have to turn people away or recommend other places. "Too much demand is not a bad challenge to have," says Penny, but it is hard for them to turn away potential buyers.

Penny believes that many farmers are forcing crops to grow earlier in the season, which can affect their taste and quality. The Jordan family tends to wait until they feel conditions are right.

To address the challenge of filling demand, Penny would like to increase farmer capacity. One of the limitations to increasing capacity is access to land. Land availability and affordability is a challenge for many farmers, both those wishing to expand and those looking to enter the sector. "Farmers cannot increase production without access to land," notes Penny. In Cape Elizabeth, the farmers say that there is land available for lease. However, if the land is not currently in production, anyone farming there will have to develop the land and deal with problems such as deer populations.

Recommendations

What does the Jordan family recommend to other farmers dealing with challenging weather? "Build greenhouses!" says Penny. In other words, build a controlled climate. Jordan's Farm uses hoop houses, but they do not yet have greenhouses, an infrastructure the family would like to see. Penny is particularly curious about greenhouses that are built with semi-transparent photovoltaic material, giving them the potential to generate energy as well as provide a controlled environment for growing. She is also interested in experimenting with hydroponic growing, a method of growing crops in water with nutrient solutions rather than soil.[3] In general, she

sees closed loop systems as a good way to deal with unpredictable weather.

Warmer springs make it tempting to put crops in the fields early, but Penny's brother always reminds them not to get over confident. Milder weather inthe spring doesn't mean there won't be frost at night, and many farmers plant too early only to lost crops to frost. Because of this, warm springs can be dangerously misleading.

Despite some of the summertime challenges, the Jordan siblings say that they have not had to significantly change how they are operating. Being flexible and ready to adapt to weather conditions has always been a part of farming. Cape Elizabeth is also a good location, and they feel lucky to have the land. "We are blessed to be here," says Penny.

Resources:

•Penny was involved in a project on Year Round Agriculture: http://mesas.org/year-round-agriculture/

•A few companies are manufacturing solar PV greenhouses: http://www.solarpvgreenhouse.com

•The USDA provides information on hydroponic production: http://afsic.nal.usda.gov/aquaculture-and-soilless-farming/hydroponics

•Read more about Jordan's Farm at their website: http://www.jordansfarm.com

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Climate Change and the New England Food System Case Study Series

This case study was researched and written by UNHSI's 2014 Thomas W. Haas Climate Fellow, Ruby Woodside. Ruby's fellowship focused on documenting and communicating climate impacts and adaptation strategies for New England farmers and fishermen. Ruby is currently working on a Masters of Environmental Science and Policy as well as an MBA in Sustainability at Clark University. The fellowship is based at the UNH Sustainability Institute, and hosted in collaboration with Food Solutions New England (FSNE). FSNE is a regional, collaborative network organized around a single goal: to transform the New England food system into a resilient driver of healthy food, sustainable farming and fishing, and thriving communities. Learn more at www.foodsolutionsne.org.

University of New Hampshire
The Sustainability Institute

107 Nesmith Hall, 131 Main Street, Durham, NH 03824 USA
603.862.4088 ph | 603.862.0785 fax | www.sustainableunh.unh.edu