

Organic Opportunities Conference in St. John's, NL

January 13-14, 2016

(Notes by Dan Rubin, NL)

I attended this conference as a local grower, seed producer and speaker. Along with Stephanie Hughes of ACORN, I presented a keynote speech after supper on the first day of the conference. This was a really interesting event, with a wide diversity of speakers, from farmers (local and also from NB and NS), government agencies that support agriculture and people from the Marine Institute who are working on expanding use of by-products from fisheries and aquaculture as inputs for medicine, agriculture and manufacturing.

Here is an overview of the sessions, the presenters and some of their interesting points:

WEDNESDAY, January 13th

The conference was kept on track by Ken Kavanagh, who introduced the speakers and helped keep all the presenters within their time slots. The other person who deserves a lot of credit is Jamie Warren, of the Federation of Agriculture, who helped put the event together. It was a great two days, with lot of valuable ideas shared by those attending and presenting.

The first speakers were Melvin Rideout, President of the NL Federation of Agriculture, and Dave Jennings, representing the newly formed provincial Dept. of Forestry and Agrifoods, now part of Rural Development. Each of them briefly welcomed us and affirmed the roles their organizations can play in supporting agriculture here.

After that we heard from Theresa Richards, Executive Director of ACORN (our regional organic growers network) and Jane White, a provincial employee who organizes support for growers. They are two of our strong regional contacts regarding best practices for marketing, growing and funding opportunities. Among other things they reviewed the procedures for organic certification and the value to growers of becoming certified.

Theresa presented an overview of ACORN's Strategic Plan with goals aimed at 2020 as a target year for having many initiatives in place to support organic growers. This is an action plan; it is all about building partnerships and collaboration. The general goals are: (1) to develop government support for local, organic production, (2) to expand consumer understanding, (3) to create leverage for change in how food is produced and consumed, (4) to improve levels of certification and the organic certification process, (5) to improve access to organic inputs for growers, and (6) to build a network of knowledge sharing between growers. As Jane White pointed out, "Whether you want to be or not you are playing a role in food security, and seeds are a big part of this." There is a lot to be done to restore and rebuild healthy food production in our region.

This was followed by a discussion of organic certification: what it is, how it works and why it is desirable. Ecological farming is all about avoiding synthetic inputs while rebuilding soil biology to grow healthy

food. Melba Rabinowitz of the Organic Farm in Portugal Cove pointed out that, in addition to being able to sell your produce as “organic,” organic growers are plugged into an informational network that passes along new concerns and limitations regarding the use of various inputs and materials.

Dr. Adrian Unc, an agronomist and researcher who heads the new Boreal Ecosystems Research Initiative at Grenfell University. This program, located in western Newfoundland, has been set up to carry out studies of all aspects of the dynamics of soil, water and vegetation, both in wild areas and in cultivated farmland. This means that they have the equipment, skills and interest to support organic agriculture by investigating local soil conditions, impacts of various nutrients on growth and many other aspects of the living environment that affect food production. His presentation was interesting, humorous and inviting. The Boreal Ecosystem Research centre is a great new element in the local landscape, for sure.

Dr. Unc discussed the myth of purity and compared it to the actual details of restoring ecological balance. He explored greenhouse vs. field production, the deeper issue of food quality, sustainability and externalities, some of the risks of organic approaches, the need for a holistic system, the need for more soil science, focus on microbiotic communities in soil, and the actual impact and value of various soil inputs which all need to be studied. A better understanding of the pathways that nutrients follow outside and inside plants will help us improve our practices. Finally, we need to see that various waste materials are resources we can use for food production. He is set up to analyze soils, both physically and chemically, and has tools for remote sensing sub-soil structure analysis. Essentially, he can now offer a full spectrum of research and site analysis to interested growers.

As Dr. Unc pointed out, agriculture in Newfoundland is inherently ecological, since we tend to grow food in small cultivated patches, surrounded by wild land and forest, rocky hillsides, and open ocean. The soils here are unique, layered, acidic and rocky. We need to learn how to build them up, to increase fertility for various crops. What we really need to do is differentiate strategy from tactics. Strategy is the plan; tactics are the specifics of how we get where we want to go. We need both.

His presentation will be available online. He can be contacted by email at aunc@grenfell.mun.ca.

Next was Marc Keilley, manager of Major Research Partnerships at Memorial University. He previously worked in aquaculture, but has had his eyes opened to the importance of food and food production. He told us that Memorial would be very interested in partnering with other groups or sites, if a truly innovative approach is being taken.

He is interested in looking at ways to improve greenhouse systems. He has some experience in aquaculture, and one parallel for improving what we are doing are the advances that have been made in mussel culture based on a more detailed analysis and appreciation of water quality and water flow. There may be parallels in air quality and flow in greenhouses, or improvements to be made in lighting systems. He works at the Bruneau Centre. Memorial has a lot of expertise which they are willing to share. His contacts are mkielley@mun.ca and by telephone: 709-864-2095.

After a short break we heard from two scientists (Dr. Deepik Dave and Candice Way) of the Marine Institute, who shared details of the equipment and methods they are developing for the extraction of

valuable by-products from fisheries and aquaculture. In some cases, these derivatives can be very valuable (up to \$10,000 per ounce!) for some compounds that they are refining from chitin found in shells of shrimp and crab. They are also interested in lower value extraction, for example to develop locally produced organic fertilizers made from seafood waste. We already are in contact with Shell-Ex, a company in Central NL, which is manufacturing a high potency input from the shells of shrimp, which we have used in our garden. This was a really interesting presentation, offering new possibilities for large scale soil enrichment here in Newfoundland and Labrador.

Candice pointed out that high pressure can be used to sterilize food. She is very interested in vermicomposting, soil enhancement, aquaponics and hydroponics, waste management and waste utilization. Methane generated from waste can be used for power and heat. Micropower plants are now available in self-contained units packed into shipping containers from the UK, that can process up to two tons of waste per day. These Flexibuster systems are now available here. This could be a source of power for homes and greenhouses. The Marine Institute and CASD can assist with product development and marketing.

Next up were two regional farmers: Rupert Jannasch, of Ironwood Farm, located in the Annapolis Valley in Nova Scotia, and Tim Livingston, who owns Strawberry Hill Farm, near Woodstock, New Brunswick. Both men operate mixed farms, combining livestock (cattle, pigs, chickens) with vegetable production. They both had lots of experience to share, focused on practices they have developed them to improve the ways they grow, process, store and distribute food. They focused on the importance of season extension using greenhouses, row covers and tunnels to protect crops from cold and wind, which will be essential for our climate as well for our site

The final speaker before lunch was Andrea Maunder, owner of Bacalao Restaurant in St. John's, and chair of the provincial restaurant owners' association. She encouraged us to communicate directly with food staff and especially the chefs if we have locally grown, organic vegetables to sell, because they plan ahead regarding their purchases and menu planning, up to a month. They would need to know in advance, if a particular crop will be available to them at a certain time. She also suggested that unless we have already set up winter storage, we might consider other forms of preserving food for sale to restaurants, including cold storage, freezing and pickling. Pickles and exotic condiments are growing steadily in popularity. She discussed how the local meat supply is evolving, pointing out the availability of local pork and lamb, some work being done on beef and exciting developments in regional shellfish including mussels and oysters. There is also great interest among chefs in purchasing game meats from local hunters. There is a market, she said, for rabbit, Cornish game hens and quail, if anyone wants to raise these. Finally, she presented some ideas about upcoming food trends, based on our province usually being a year or two behind other locations. She mentioned the following trends:

- Growing concern over artificial chemicals, additives and biocides in food
- An increased preference for food from organic sources
- A desire to know more about the source: who grew/gathered/caught it?
- An increasing emphasis on plant-based foods
- A desire for local, high quality foods

- Interest in and use of “lower” cuts of meat, including organ meats
- Beets will be “the next kale” as chefs find new ways to use them
- Interest in coloured and heirloom vegetables
- Opening to ethnic cuisines, use of chiles, lesser known vegetables, spices
- Strong and growing interest in fermented and pickled foods (sauerkraut, etc.)

She recommended that we develop personal relationships with local chefs, who are very interested in sourcing high quality, locally produced, ingredients and who will pay well for fresh produce and meats.

After a very nice lunch, we heard from Carol Anne Walsh, a representative of Forestry and Agrifoods NL. She works in industry development. She reviewed regulations related to commercial egg production. Some interesting points were: eggs cannot be marketed in recycled cartons, but must be sold in generic ones, with a producers label and a stamp or label stating a “best before” date. The limit for chickens in most areas is 99 birds, which is actually too small for commercial production. There is no limit to the number of turkeys, but if the meat is sold, they must be slaughtered and processed by an approved abattoir. Colemans Stores are a big supporter of local agriculture. Eggs must be gathered daily, for sale.

Tim Livingstone, from New Brunswick, talked about how he raises free range chickens, using mobile chicken houses on hay wagons and electric fences powered by solar panels and a battery, to protect his flocks from predators, while being able to move them from site to site. His egg collection system is a very elegant European one, in which the eggs are laid in egg boxes then roll down a padded slope to a collection trough, which keeps them clean and easily accessible. He said that the design for this is available online, for anyone who wants to build their own. There was also some discussion of raising turkeys, and processing requirements for meat (growers must use a federally approved abattoir.)

Tim emphasized the need for efficient organization. Based on these presentations by farmers who combine livestock with vegetable growing, we should move the site for manure compost closer to the barn, greenhouse and vegetable beds, to make it more accessible and to keep it weed free. He pointed out that young chickens are fragile, must be sheltered, kept warm. He raises broilers on grass, which means he must move them every couple of days to a new area. He has water lines with nipple drinkers to supply their water. They are taken to a local abattoir, 15 minutes away, where they are slaughtered, cut up and frozen. He keeps them in his freezer to sell through the year. For egg production, he collects daily and keeps the eggs in a 144 egg tray, making it easy to keep track of their production levels. For 199 laying hens, it takes him 20 minutes a day to feed, water and check on them, 10 minutes a day for processing and half an hour for processing eggs. He does not candle the eggs, assuming that fertilization rates will be low and the occasional fertilized egg will help maintain his reputation for organic, free range eggs.

After a short break, there were two concurrent sessions, one on organic livestock and one on season extension for vegetables and fruit. I attended the session on season extension led by Tim Livingstone.

Tim and his family (wife and two sons) saved for 20 years then bought acreage near Woodstock, NB. He had grown up in New Hampshire. The farm had a run-down house which needed a lot of work. In the beginning they didn't plan well enough or set limits to what they tried to do, which led to problems.

One thing they decided from the first was that they would do no milking. The location is warm, but also near the Bay of Fundy, which moderates temperatures. They are right on the St. John River, which also helps moderate temperatures, so their first frost date is a bit later than further inland. They grow in greenhouses and under hoops and row cover. They purchased a CSA from another grower, and also the equipment that came with it, which was a bit more than they needed. They grow melons, sweet potatoes, cantaloupes, peppers, brassicas, salad mix, lettuce, spinach and other greens. They grow acres of squash, carrots and other root vegetables, for which they have developed winter storage in cooled containers. Portable tunnels are an essential part of extending the growing season. They also grow strawberries, after people pointed out they had to, since they were Strawberry Hill Farm. After trying ever bearing varieties with a matted root system, they have moved to June berries as an annual crop, planted through holes in clear plastic (to warm the soil and keep down weeds).

After they experienced labour issues in their own family (grumpy teens) they began hiring workers and have had a really great time with workers from Jamaica. Developing a business plan and carefully tracking each of their crops, in terms of space needed, work required, storage and sales, has made a big difference in the effectiveness of their farm. Their business plan was focused on their personal goals, which include time off to recharge with family. They bought three small islands in the Bay of Fundy and now spend time there, in a cabin they built. Since farming is so complex and full time, this is an important aspect of their lives. Their sales now consist of a winter box program, through which they sell as a CSA from their stored vegetables (60%), at a cost of \$350 per week for a mixed box. They also are selling produce to a school lunch program, as a pilot project. They put their pigs into the local parade, which is always a winner, and have depended for at least a third of their sales on organic meat (beef, pork, chicken) and egg sales. They maintain a flock of 199 layers for egg production. Tim strongly recommends The Organic Farmer's Business Handbook as an essential reference for organic farmers.

What I learned from this one was the need for carefully constructed and tended protective structures. We might want to consider a temporary (seasonal) greenhouse or hoop house which (hopefully) would not require a permit, if it is a temporary garden structure. The difference this makes, in terms of warmth, shelter from snow, rain and ice, is very significant. Essentially, it extends the growing season for Atlantic growers, by more than a month, allowing earlier planting and a greatly extended harvest. Tim's operation is linked to multiple distribution modes, including CSA (community supported agriculture), in which people subscribe and support the farm with an annual or weekly fee, in return for which they get a weekly box of fresh vegetables, made up of whatever has been harvest that week. He also sells at a farmer's market and does some direct sales at his farm. He does a small amount of sales to retail stores. His winter storage is quite developed: he has a storage warehouse, and coolers for carrots, squash and other crops. He is working on a very different scale from us, growing acres of each thing, but the basic principles apply to us as well. This means, for example, that we will really benefit from having a working root cellar for root crops, onions and squash. One point he shared is that his carrots rot if stored near apples or cabbage, because of ethylene gas that those vegetables emit.

He was followed by Rupert Jaanasch (a grower from Nova Scotia) who advised us to find and develop niche markets. He also said that a willingness to adapt and change what we grow is an asset. For example, he started out growing cluster and grape tomatoes, which he sold to local markets. As that

market became full, with other growers offering the same, he shifted to other crops. Interestingly, one of his best markets was in Deer Lake, with his produce coming over on the ferry from Nova Scotia. Now he is growing high bush blueberries, raspberries and other fruits. In 2011-2012 a number of factors, including competition, food trends, labour costs meant they moved away from the tomato varieties he was growing and selling. They are still searching for a really good, reliable variety of cluster tomatoes, since those sell well, on the vine. He found that his older workers don't want to harvest the smaller tomatoes, because it means working on their knees, and anyway, the deer finished off his crop. He is growing cucumbers and greens in greenhouses and hoop houses. He has steadily moved into CSA for marketing, a big change from his early reliance on selling to retailers. He doesn't even sell to any restaurants any more, because taking produce to the buyers was taking too much time in deliveries. Also he has moved into livestock, custom grazing Angus beef, raising sheep (40-50 ewes for meat and wool) and pigs, raised on pasture and feed or indoors on sheep manure. With a local approved processing facility being built near him, he expects this will continue. For him, sustainability means (1) constantly improving the soil, (2) planning for and dealing with purchase and depreciation of equipment, (3) maintaining physical endurance and capacity for work and (4) maintaining healthy relationships with family members and workers.

After a break, there were breakout sessions, focused on implementation of ACORN's five year plan. I skipped these to rest and prepare for the after dinner presentation that I would be giving along with Stephanie Hughes of ACORN.

The supper was very nice: local chicken, with some locally grown garnish and steamed vegetables. During the dessert course, Stephanie and I did our presentation. She talked about ACORN, its goals and programs, then I presented a slide show about the development of our home garden, Perfectly Perennial Herbs and Seeds and the founding and growth over the past three years of Deborah's Garden as a community based agricultural site. Our website has the details: www.perfectlyperennial.ca.

THURSDAY, January 14th

The second day began with reports on the strategy sessions held the previous afternoon. Details of the individual reports will be made available online, including the action items they produced or confirmed.

The first growers session of the day was a panel on inputs for fertility with Sarah Crocker (of Seed to Spoon and Food First NL), Don Bragg, local grower (Rocks to Riches Farm), Desmond Sellers (Nature's Best, Happy Valley/Goose Bay, Labrador) and also Tim Livingstone and Rupert Jaanasch. Here are the main points that emerged from the session, in which the growers answered specific questions about where we can find inputs to help build our soils:

- Know your soils (constituents, biology and structure)
- Pelletized chicken manure can be purchased in bulk by local growers
- Restaurant waste is a source for making compost
- Fish waste and capelin are available
- Kelp requires a truck and travelling a distance but is invaluable for micronutrients
- Sea Boost in Nova Scotia ships bags of composted fish plant waste

- Carew's will deliver triple mix compost
- Shrimp and crab waste is being processed into high intensity fertilizer by Shell-Ex
- Manure is available by the ton and can be delivered by cattle farmers
- Sheep manure is available from Gary and Raylene Williams (farmgirl143@hotmail.com)
- Worm compost from local producers
- Sawdust and poultry manure is being composted by Don (produces 2/2/1 fertilizer)
- A distributed composting system could be developed
- Rock phosphate is about \$30 for a 50 lb. bag
- Green sand
- Maple leaves are abundant in the Fall
- Compost teas must be oxygenated to prevent anaerobic decomposition

During the break I met one-on-one with Marc Keilley of Memorial University to explore the idea of a partnership to help us with the design and construction of an earth-sheltered greenhouse, there was a session on Action Planning. There was interest in forming a group or utilizing existing organizations to help focus the organic agenda, and to develop markets and help tie growers together. Especially in the area of public policy and lobbying government, there is a need for at least one person to be paid to maintain connections and move things forward. Various organizational options were discussed.

The final focused session of the conference offered the choice of season extension for vegetables or livestock. I attended the sessions on season extension, presented by Tim Livingstone and Robert Jaanasch.

Tim mentioned his preferred turnips are Hucker Eye Salad Turnips, which he grows for greens and roots. He also seeds a salad mix and grows these out in hoop houses, under a plastic cover. He advised that it is not a good idea to mix salad greens and brassicas, as they are harvested quite differently. Brassicas in wide beds, planted 4 inches apart can be cut, starting at one end of the row, taking all the leaves across the bed, and will grow back for a second and third cutting. He is lucky to have soil that he considers to be the optimum mix of sand, clay and loam, in the St. John river valley. He seeds using a Djang Clean Seeder (available from Lee Valley) and does succession planting to extend his harvest. He plants under a "Caterpillar Tunnel" (he explained it looks like a big caterpillar) to allow his plants to get established early, and grow out later than without protection. He does a Spring planting, after the last frost, harvests greens, then a Fall planting in mid-September. The timing of the Fall planting is critical. Too early and the greens won't stay long enough; too late, and growth is really affected. You want your plants to be in the ground and growing for the final weeks of warmth in late Fall. If they miss that, they will be stunted. He harvests mature greens and holds them in a cooler for up to a month, thus extending his sale season, and availability of greens for including them in boxes for his CSA. The Fall seeding in hoop houses follows after the harvest of tomatoes and peppers grown in the same ground. Hoop houses need to be 20 to 30 feet wide, because the sides will be significantly cooler than the middle. He likes using a Mantis tiller to maintain his beds and weed between them, and has found the rechargeable electric version to be better than the gas.

He grows sweet potatoes and described in detail how to start them: obtain commercial (or organic) sweet potatoes and plant them whole (uncut) in trays, in soil in late winter. Keep them for up to a month or two maintaining soil moisture at 85 to 90 degrees F, until they sprout. Let the sprouts grow up, then pull them off to plant outdoors. Plant the sprouts through clear plastic with one inch holes (optimum size) then grow out under protection, for warmth. His yields have been quite good this way.

He discussed operation of heated greenhouses. If you do need to heat, there are several options: wood, oil, coal. Some organic growers have turned to coal fired heaters. He has used wood, but it takes real dedication because someone has to stoke the fire in the middle of the night every night, for months through the coldest part of the year. Fans are definitely needed to move the air, prevent buildup of moisture and circulate heat. Preventing humidity buildup during winter is critical: it can lead to plant burn from frost, if not dealt with. Humidity sensors to trigger fans is one option to consider.

He seeds 288 seeds into a flat of plugs, then transplants them as plugs. Some new varieties of spinach may be worth trying as they are said to be mould resistant. He sells spinach for \$12 a pound wholesale, and \$4 for 3 ounces retail. Kale sells for \$6 a pound wholesale. It is valued and popular. He grows his kale in a 15 by 70 foot greenhouse, covering the plants with garden fabric to prevent cooling, and to stabilize temperature.

If you grow tomatoes in the same beds for more than three or four years, they exhaust the soil. So he rotates their location. Grafted tomatoes are one option for disease resistance. He ripens his tomatoes, once picked, in the same building he uses for germination, a heated structure, with temperature control.

He grows June bearing strawberries as an annual crop, planting in rows through plastic. During frost, they are covered with straw to protect the plants and berries. He buys row cover in huge roles and reuses it three or even four times, until it is full of holes and completely worn out. Best strawberry variety is Chandler, and he has also grown AC Lola and Jewel (big, but not as tasty as Chandler).

He digs in compost annually before planting lettuce. Salad Nova lettuce, planted through biodegradable clear plastic is another crop of Tim's. But now this plastic is not allowed if you are organically certified. Mesh tunnels for peppers works better than plastic. He grows a variety called Dubois. The mesh he uses is 600 feet by 24 foot polyethylene. He finds if he leaves his hoop houses up through the winter, it encourages weed growth, so he rolls that covering back to allow frost to discourage the weeds. He uses hoops for early growth, then moves them once plants are hardened off, to protect a new crop going in the ground. He uses ORANGE sand bags to hold down the edges of the covering, because the brighter colour is better than green for preventing accidental ripping of the bags by hand operated machinery.

He grows melons under hoops, and leaves the hoops on, for warmth. He grow Megaton Leeks (best commercial variety he has found),

You need a 52 degree temperature for sweet potato growth and production. Squash needs lots of air flow, if grown under hoops (fans, or open at both ends of tunnel). Winter crops are really appreciated by buyers and CSA members.

Finally, some notes from Robert Jaanasch's presentation:

He uses both row covers and tunnel structures. These can be up to half as big as a commercial greenhouse. They have been used for generations. Tunnels provide a helpful microclimate, but we should realize they only boost temperature by 3 degrees. But they also keep rain off plants, especially when there is hard, protracted rainfall. If soil is well-drained or sloping, you may be able to get by with just row cover, but a tunnel also protects from wind. But it must be very well tied down, anchored. He provides a good anchor by using augers that screw into the ground, then ties to these. The plastic is stretched over the hoops then tied down with ropes that weave up and back from one side of the tunnel to the other. This is a simple, inexpensive way to do this. It also helps tunnels be strong enough to deal with snow load during the colder months. Starting at one end, the ropes are lashed across, moving down the tunnel, then coming back for double protection. With the tunnels running uphill, there is some natural convection, to keep the air moving inside. There are wide doors open at each end, unless it is very cold outside.

Multi-Shelter Solutions offers a bargain in modified Hanley Hoop Houses. At about a dollar per square foot they are affordable, starting at 17 foot in height, at tallest point. They are easy for four people to move, but the full curve at the end is wasted space and lets rain and cold in when cover is rolled back. They can be up to 100 feet in length.

Summing Up: Final Session

We agreed this was a great conference, very useful and interesting, and that it was good to bring growers and supporters together to explore various aspects of organic production and distribution. As moderator Ken Kavanagh pointed out, it is all about communication and collaboration. We have so much to gain from working together. There was a mention of the upcoming expansion and new site for the St. John's Farmer's Market, and the new role of Gaze Seeds as a source for inputs, seeds and also an education and meeting site. Jane White pointed out that building up our soils is critical. Mike Rabinowitz is available here on the Avalon, for consultation with other growers. Atlantic Canada already has organic sales comparable to BC! ACORN needs local members in Newfoundland and Labrador. A great organization to be part of.