

Acorn's Pastured Poultry Symposium—January 30, 2017

Morning session:

Sally Bernard – Sally Bernard her partner, Mark and their four kids, own East Coast Organic Feed Mill /Barnyard Organic Ltd. in Freetown PEI, where they have produced certified organic grains and oilseeds since 2003. For the past ten years, they also raise organic meat chickens & organic laying hens whose eggs and meat they sell through their 100-member CSA. Along with soybean roasting, seed cleaning and grain drying, Mark and Sally have built an on-farm provincially inspected organic poultry processing facility to do custom processing as well.

Sally's latest project is her foray into becoming a “Rent the Chicken” operator—an exciting North-American-wide initiative that provides families with an affordable and practical opportunity to try out having backyard hens for fresh eggs without incurring long-term commitment and start-up costs.

Tim Livingstone – Tim Livingstone grew up on a farm in New Hampshire and helped with the care of a variety of livestock. Tim also managed pasture for grazing sheep. In 2011 Tim and his wife Kirsten bought their own farm—Strawberry Hill Farm—near Woodstock, NB on which they farm certified organic livestock, vegetables, and berries with the aim to create a holistic farm where all parts support the whole. A sought-after presenter, Tim is very active in the organic agriculture sector nationally, is a Gerrit Loo award winner and incredibly generous with this time and knowledge. And we are very thankful that both Tim and Sally were available to share their expertise and experience with us today. Tim has been farming at Strawberry Hill Farm for 5 years: 400 weekly veggie boxes, 50 varieties of veggies, pork, beef, poultry and eggs.

Main definitions used throughout the presentation:

Brooder – place to start babies

Chicks – day old to 4 weeks

Pullets – 5 weeks to 20 weeks

Hens – Laying eggs

Broilers – Meat birds

Dual purpose – layers / meat birds (nice idea but not most profitable)

Meat Kings – Cornish cross. Common meat bird.

Red Broilers – Also a meat bird, forage better than Meat Kings

Heritage – Older bloodlines graze better than more recent varieties but typically produce less

Chicken tractor – shelter you can move in the pasture (often moved by hand). Both presenters prefer the term chicken shelter

Coop – Winter housing

COP – Cost of production

Off-Quota production – provincial limits of birds you can own before having to buy into system

Example from Polyface Farm (Joel Salatin):

Keeps hens over three seasons:

1. In egg mobiles and on pasture
2. On pasture, following the cattle
3. Hens under rabbit cages on woodchips. Still laying and warm in winter

Brooding: refers to a chick that is 2 days or younger

- For organic standards the birds cannot have eaten, they can be vaccinated but not have received anti-biotics
- Normally gets them from Shurgain (who source from Clark's Chick Hatchery in Keswick) or Gilbert Matheson of Brant's Breeder Farm – black layers from Sussex)
- Prefers convention varieties: influenced by Joel Salatin. Choose breeds that are bred for that purpose and more typical than what consumers are used to getting.
- Often get Merrick's vaccine
- Chicks need to come in contact with soil within their first three days to develop antibodies for coccidiosis. (First three days chicks are protected with their mother's antibodies, essential to use that time to put the chicks in contact with germs.
- Can trim beaks – ok for organic standards, use laser treatment for minimal impact.
- Every few years, you may just get a batch that seems to want to die (like 3 or 4 dead per day out of 165 – no rhyme or reason)

Setting up the brooder:

- Area needs to be warm and draft free
- Start at 95F for the first week and reduce by 5F weekly. (Tim drops temperature by 7 or 8F / week). For broilers it's ok to reduce the temperature a little faster.
- Heat the birds for three or four weeks generally
- Ensure water and feed is within the heated area otherwise the chicks won't eat.
- Both presenters prefer an indoor brooder, ideally a semi-automated system that doesn't require 24/7 care – max should need to check twice daily

Brooder designs:

- Set brooder on 2nd story to hen house: heat rises, they'll stay warmer
- Small area in barn or other unheated building
- 2ft x 4ft x 8in deep box made with 3/4th plywood, with a metal strip on the top under the heat lamps to better diffuse the heat. Leave enough room for chicks to get under the box – water and food immediately on the perimeter so chicks can stay warm while feeding.
- To control temperature helpful to have 2 or 3 light bulbs. 1 or 2 on constantly, the others attached to a thermostat to regulate consistent temperature.

- Need to get birds used to dark nights before moving them outside, half a week to a week is the minimum. The move outside will be shock enough so essential to have them used to the dark.
- Typically 2.5 to 3.5 weeks of full time light for broilers before prepping for dark nights, and 3 to 4 weeks, or more, for hen chicks
- Check on them twice a day – Possible problems can be noticed by no chirping, too loud of chirping, or if clustered together
- Have both tried the propane heaters – both prefer heat lamps, as about same cost but less likely to catch fire with all the dust

Brooder bedding:

- Saw dust / shavings (can buy, make sure are untreated)
- Some use newspaper as it's supposed to help chick find the grain, but it can be slippery and cause lameness (splaying legs)
- Bedding needs to stay clean and dry
- Sand has proven a good option – it warms up, holds the heat, dries well, only needs to be changed every two batches, also allows them to start dusting after only one week, and is good for stable legs
- Can add the anti-grip rolls from the dollar store for the first week
- Peat moss can be used, turkeys might eat it but chickens don't
- Premier One Supplies makes a heating plate for up to 50 chicks, \$150

Feed:

- Make sure there are soil/grass/weed CLUMPS in brooder during the first day. Need to encounter germs / learn how to forage.
- Manure consistency will indicate problems – too moist can mean too much protein in diet
- Feed chick starter for 6 weeks for hen chicks and 4 weeks for broiler chicks
- You can use a simple feeder tray with an egg carton with the top cut off. Can throw it out instead of sterilizing.
- Both enjoy the hopper feeder
- Red is a good colour – birds are attracted to red

Water:

- Nipple feeder system with cup underneath. Cup catches drip and can from nipple or cup and it keeps the bedding dry
- Need to clean out cups in first 1 to 2 weeks as chicks are so small cups are essentially right on the ground
- Tim found his on Amazon, from China
- Limit water, to avoid spills / leaks. If on a hose / faucet, use it to fill a 5 gallon bucket and turn off once daily

Transition to outdoors

- Use 'nights' for 5 to 7 days indoors before transitioning, unless you can run lights to outdoor pen

- Much better if done with mild (warm) weather – If first outside later than early Sept, you can have more problems
- Broilers only in brooder for maximum of two weeks in the summer

Some challenges Sally and Tim have had:

- Tim's birds had Ricketts due to expired minerals that had been added to the feed that meant the chicks weren't getting the proper nutrition
- Rats have been a problem with or without concrete floors. In the barn, they will come up through the floors, or eat through the walls. Best solution is rodent retardant spray foam, a layer of steel wool, and more spray foam – this still won't stop them, but will definitely slow it down

Cost of Production – Based on 165 chicks

- \$5.10 for a pullet day 1 to 4 weeks
- \$4.79 for a broiler day 1 to 4 weeks
- Feed – 200 kg \$240
- Labour – 9.25 hrs @\$15/hr
- Electricity, bedding, cost of chick

Costs – Raising the Pullet

- Need 16 lbs of grain to raise to 20 weeks
- \$1000 / tonne = \$0.453 / lb
- \$7.26 / per bird
- \$2 – cost of chick
- Total: approx. \$10 per bird
- Plus lights and labour
- Estimate \$14 to \$16 to raise a bird before overhead

Direct Costs

- Cost to raise a bird: \$14 to 16
- \$0.64 at 300 eggs / bird (82% lay rate)
- Feed: 4lbs / dozen - \$0.45 / lb - \$1.80 / dozen
- Cost of fountain \$0.30
- Total \$2.74

For Tim:

- Direct costs are tied directly to the animal
- Overhead costs: things like insurance, vehicle, barns, etc.
- Overall pricing should be ½ direct cost, ¼ labour (including Tim's time), ¼ other / overhead

Calculating Labour on Hens: (based on flock of 200)

- 2 checks/day - 2 x 10 min
- Collect in pm: 12 min in 10 min
- Wash eggs: 10 min
- Box eggs: 10 min

- 55 min rounded to 1 hour per 12 dozen: \$20/hour labour

Cleaning Eggs:

- CFIA requirement is that the egg must be clean
- Avoid batch washing - contamination from one egg could contaminate them all.
- Slow running water that is warmer than the egg

Cost Analysis:

- \$2.74 direct cost
- \$20 / hour labour
- 12 dozen = \$1.67 / dozen
- \$4.41 / dozen
- Average selling price - $\$5.5 \times 12 \times 365 = \$24,090$
- Overhead + profit = \$1.09
- Approx. \$12,000 gross profit after direct costs (still need to pay insurance, buildings, trucks etc.).

Use known value principle when setting prices:

- People only know the value of certain items. Price these reasonable and people will deem that all the prices are reasonable and will buy other items at higher margins.

Savings on pasture vs. buying feed?

- Not really. Have to actually limit how much grass birds eat - if eating too much grass they will not get enough protein and they won't produce an egg a day
- Tim moves the chicken shelter once a week. Organic standards say must move once a week.
- Find quantity of grain consumed is about the same all year round - outside birds burn more energy
- Other benefits such as Nitrogen left on pasture from manure - hard to actually measure. Depends on age of birds and many other factors.

Feed scenarios

- Grain cost should not be sole factor to consider. What matters most is direct cost per pound. Does the bird metabolize the feed well?
- For non-GMO but non-organic, cost is closer to \$450 / tonne.
- BioAg - \$1000 / tonne
- Homestead Organic - \$1,150 / tonne
- Barnyard Organic - \$1,1336 / tonne
- Average price customers willing to pay between \$5 - \$5.95 / lb.
- The heavier the bird, the less efficient it is at equating feed for meat
- 5lbs seems to be ideal cost/feed weight
- If one has own processing facility you can sell liver, feet, other less desirable parts (Sally)
- Tim's abattoir charges extra to keep the liver, feet, etc., so it is cost neutral to keep and sell them.

Why don't you hatch your own?

Too much detailed work to breed

Breeding too costly / labour intensive for such small batches (Approx \$1 per bird to buy)

Marvin Weaver suggestions:

Has used a brooder tractor in the pasture

Home Hardware Patio heaters used in brooders

Presentation by Tom Byers, GNB - Rules and Regulations

- DAAF primarily supports quota holders
- Premise ID program: links livestock / poultry with geographic location. Pork is only livestock with Premise ID that is enforceable. 2018 will come into effect for all livestock.

Diseases:

- Influenza (Infectious Laryotracheitis (ILT) in poultry)
- Must vaccinate to go to a show. If you buy a bird at a show and introduce a bird back into your flock you will contaminate your flock as it is a live vaccine.

Livestock Operations Act:

- Applies to new producers and existing producers who are expanding 10 times current production
- Exempt if there are less than 20 animals with 4 legs

Supply Management:

- 1979 - Canadian Chicken Marketing Agency was formed.
- Was formed because the US was awarded 6.3% of domestic production based on historic amounts from 1975 - 1978.
- Beef / pork opted not to create quota system as at the time the sectors were exporting to the US and they thought it would curtail Canadian sales

Eggs:

- 199 hens without quota
- Can sell ungraded at Farm Gate, must be graded to sell retail
- Must be stored at 4 degrees or lower, be clean and free of cracks for sale at farm gate, in new unmarked cartons that are free of a grade stamp

Chicken:

- Without quota in NB can only produce 200 birds
- Must be processed at provincial abattoir for public sale
- Must be sold at 4 degrees or less or frozen

Afternoon session:

Follow up questions from morning sessions:

- Tim - sharing the costs for his feed - new formula, with his own mix, starter and finisher
- He's going to be growing his own grain, but that's due to a particular set of circumstances: having access to a lot of land, and high needs around having to pay for shipping

- Seeding and pasturing birds on red clover - it doesn't actually reduce feed costs that much - but it makes the egg taste delicious, and makes a very yellow egg
- When the chicks are small, they aren't rotating that often - every week to 10 days, they get stressed and it raises the possibility of squashing them
- If you're mixing your own feed mix, you want to make sure you're using a mineral mix - getting the right mixture is really challenging, and it's hard to quantify exactly what's happening in your pasture - logistically figuring it out can be challenging

Light

- Organic standard requires a 10 hour night - and having the light shut off at the same time every night
- Lights go on at 4 am, and then off at 8pm
- Gradual light reduction is more natural (if they get switched off before sunset, there is a more gradual reduction)
- Tim has tried having the lights on all day as insurance against the power going out
- In the field, he uses an LED light and solar panel - running lights to make sure they are getting 14-16 hours of light a day - making sure that the chickens get enough light, or else production goes down
- Simple light timer (one with a cover) can be found at Wal-Mart, and is very helpful
- He has also noticed that anything that gets them excited makes production go down
 - Including introducing interesting food
 - Removing the birds from their nest boxes at night
 - Removing feed (to control rats)

Moving their coops at night, instead of in the morning, has been one tool to control this

Having a steady supply of feed (so that they aren't excited when a new batch comes in)

- Production on pasture is lower than production in the barn (many more variables)
- While high production is important, hens that aren't producing also eat less food, and so it's not the hugest loss when they stop

Nest Boxes and egg cleaning

- Clean eggs are a top priority, because of the time involved cleaning them
- Tim has roll away boxes, can harvest only once a day (which is required in the standard)
- Water washing is fastest (not allowed in Europe)
- Eggs are laid with a film on them which protects and preserve them
- CFIA requires washing, as does the general public
- Tim has mats underneath the nesting boxes, eggs can be collected directly on it to, and then mats are shaken out
- Slight slope - 1 inch, mats need to be really tough, otherwise chickens will peck them apart, 4x 8 foot long boxes for 200 birds (divided into 4 sections)

- Sally uses the “Best Nest Box System”, from the States, the Cackelack system is comparable - reversible so that the eggs can be rolled down either to the front or the back
- Has been a real labour saving device - eggs are now really clean and most don't need to be washed (only about 6-8 a day from 165 chickens)
- Sally uses carpet samples
- Sally also bought (before the new system) an egg-washing system from a small family operation in the States, 28 eggs/minute - cost around \$1300
- At Polyface Farms they aim to have 30 dozen washed in 20 minutes

Grading Eggs

- Because we wash, we need to refrigerate - Tim uses a best before date of 5 weeks from date of lay, stamped on the carton

Shelters

- For broilers: Sally started with the Joel Salatin style chicken tractor - really easy to make, but lots of challenges - hard to get into, heavy to move, chickens ended up hiding all in one corner
- Now have moved to an “A frame style” based off Holdanca Farms in Pugwash - still heavy, with shade cloth on top - much easier to move and get into, shade cloth cuts the wind down and keeps them dry
- Uses nipple waterers with 5 gallon buckets inside - black pipes are better than clear or white, because light makes algae grow (if using white, must clean regularly or it will get plugged up)
- Uses 4 wheeler and winch to move tractors
- Layers and broilers both get moved everyday
- Layers only get let out when the dew is off (sometimes pretty late) and broilers are always inside their pen
- In the new Organic Standard, access to the outside will be required, even when it's cold - will require updates
- Current layout has sand on the bottom, next boxes lining both sides of the wall
- They have lots of room to move around and sand and straw keep them occupied
- Straw deep-bedding - they don't bother spreading it out, because they will spread it out themselves
- Tim uses electrified wire, both for predators and to keep birds in
- Salatin-style chicken tractor was quickly abandoned - too heavy, using plastic instead of tin might help
- House-style coop is nice for a hobby-sized operation, pleasant and looks nice - if insulated, they could stay there through the winter
- Slanted lids are helpful if your nesting boxes are inside, so that they can't sit on top and poop on them
- Having food and water inside the tractor is useful, but not good enough - if they're outside on the ground, they want to eat there
- Another option: 15foot by 20 foot rounded housing
 - Requires a field that is long and flat enough to stay for a long time
 - If slanted, eggs can roll

- Really tough to move
- Moved to a covered wagon option - nest boxes on the side
 - Only wanted to feed on Fridays, but hasn't yet come up with a design where chickens can't waste food - if there is an option for it, they will keep scratching it away
 - Tim has two flocks "don't keep your eggs in one basket" - if something goes wrong, it's less of a loss
- For movable houses, having both ends raised makes it a lot easier to move with one person without running over a bird - if they get bumped, they'll move, and worst case scenario, they'll roll out

Winter Housing

- During the winter, to up production when it's low, Sally makes a "winter casserole" - big batch of oatmeal, blackstrap molasses, and apple cider vinegar
- Any time they are being moved (even a small amount), she'll add ACV to their water - calms and re-balances them
- Tim's layers are in the barn for the winter - protected from wet and drafts
- Easy to clean
- Protected from flooding
- Before Tim had an insulated space in the barn, they would put hay around the wagon, covering with a tarp - they survived, but it was stressful, they had to haul a lot of water, collect eggs regularly so they didn't crack
- The next year, the tractor was inside and covered in hay, but wasn't actually much better, lack of sun meant it was still quite cold
- 6 inch layer of sawdust and first cut clover hay - also keeps the yolks yellow, and keeps things fairly clean
- Organic Standard requires natural light - 5 lux/"can you read a newspaper"
- There's a free light meter app you can use to test
- 7 inches of roosting space per bird
- Water: Constant supply of clean water is important, and working to minimize your work, and the risk of an accident, is important

Barnyard Organics "Rent a Chicken" plan

- Sally has a part of an affiliate plan, 350\$+tax, she will rent folks a little coop, two chickens and some bags of feed, and people get to keep chickens in their backyards - profit margin is 43%, sweet deal
- People take them between end of May and Thanksgiving
- Chickens are in their 3rd year of production - so not at peak production, but still laying enough for home growers

Feeders

- Having the feeders a bit higher, so they can reach but not dig, is helpful in reducing waste
- Oyster shell or calcium is an important supplement
- Apple Cider Vinegar
- Hydrogen Peroxide as a cleaner

- Kelp as a feed supplement
- Diatomaceous Earth
- Shell and Grit
- Stalosan (kaolin clay) to neutralize the ammonia smell

Pasture and other issues

- Wastage on pasture might be a little less significant - they'll pick up what they've left
- Digging - dust bathing - on pasture, the holes they dig can be significant enough to be a problem if you're going to be rotating, and if you're driving over it
- Rotation with other livestock: don't like winter rye, like crimson clover and hairy vetch, love grass
- Chickens following sheep has been really successful in the past, although timing is sometimes an issue
- Predators: eagles, ravens, foxes, are all concerns - Sally had 82 meat birds taken in one night
- Now uses something called "Night Guards" - solar powered, you attach it to the outside of the fence, it blinks a red light at the eye level of the predator, and it scares them away - very worthwhile
- Guard animals are helpful options as well - guard geese, roosters, mink, skunks, dogs - dogs are a tough one, can be trained to be helpful, but neighbour's dogs are Tim's biggest predators

Record Keeping

- Organic certification records
- Mortality flock record
- Processing form for butchering
- Sales records

Processing

- Regulations are different in each province for a regulated processing facility -
- Barnyard has set up their own operation - very small facility, do about 40 birds an hour, has a cooler, then delivers them fresh the next day
- Even if you aren't setting up your own operation, you can learn a lot about your flock by being there during the processing - about all sorts of problems that you only learn by seeing the bodies
- Cost of production: Sally charges: \$5/bird +\$1/shrink bag
- 40 birds/hr = \$200 revenue/hr
- Cost/hr = \$106
 - Labour - \$60/hr (3 people)
 - Propane - \$3\$
 - Infrastructure - \$40
 - Bags - \$2.65 (for 40)
 - Margin - 47%

Tim brings the birds to be processed - and would recommend always collecting them in the morning, rather than at night - don't feed them the morning of

Marketing

- Barnyard has consistent branding on all of their cartons
- Does farm gate sales in a back cooler
- They are strong on marketing, partly for sales, partly as protection against being shut down by the government
- Never says no to media interviews
- Sells to one restaurants because they do great marketing/social media - doing their advertising for them
- Tim does “meat box” - the mixed box is by far the most popular
- Diversity for those buying vegetables is a sales option - having eggs and meat available is a big draw for customers
- Eggs: must consider that you’ll have to sell year-round, consider that if you’re a summer veggie grower