

Workshop Title **Season Extension on a Budget**

Speaker(s) & their titles: **David Greenberg , Abundant Acres (NS)**

Executive Summary:

Covering a wide range of affordable options from hoop houses to wire supported low-tunnels, this talk will integrate the experiences of the many Maritime farmers that have built and used hoop houses and other structures in the past year.

### **Workshop Notes**

Trying to build durable systems in farming – solidity – systems that can stand up to challenge. The force that crumples farms is financial stress. Season extension is crucial for financial security.

If you don't know what you are doing, it is very difficult to remove your farming practices beyond natural biological/ecological processes into a more controlled system.

When on a budget – you want to get the most effect for the least cost. Your decision making will revolve around which infrastructure costs to take on- i.e. Tractor, greenhouse, etc.

If you make a really big investment, you can get a really high return (example of Fortier and cucumber beetles).

Example of a bad use of investment:

If you have a big expensive greenhouse and you are using it for something that you could be doing in a smaller, cheaper greenhouse. (ex. Growing arugula in a greenhouse in the summer to avoid flea beetle damage).

You can use field tunnels, pronet, lightweight row-cover. It is important to choose the right tool for the job.

“Hanley hoophouse” – Todd Hanley was raised on an organic farm, decided to get a good job, moved back to the farm – had a greenhouse that blew away, used his structural engineering background to design something that worked.

No wood – no perlin, no end-walls,

When plastic is pulled on the ends of a hoop-house, it creates a triangle. You can use ropes to tension the plastic on a greenhouse. 48 inch ground anchor.

Slide: Washer on a piece of rebar – washer kinks on rebar. Rope and clip. David re-did this with a metal bracket to get rid of rope (it can wear). This does away with 90% of labor of

**2011 NS ACORN Conference  
Holiday Inn Halifax Harbourview**

putting up a greenhouse.

Slide: Spanish style greenhouse design –Hangrove (Europe, UK)

You can roll the plastic up for ventilation within 5 minutes. Tremendous ventilation. This house only costs \$1500 – economics are huge.

Digression- in an inexpensive hoophouse you can afford to grow lower value crops in a greenhouse (sweet potatoes).

In the first year, the greenhouse paid for itself three times over with crop profits. Paid for greenhouse 3 times over in first year with crops grown in it.

Slide: Crop of overwintered red russian kale. Covered them over and made \$5 plant on top of the \$7 a plant made in the summer. March 20<sup>th</sup> – tons of kale for sale – until the outdoor spring kale was ready.

1” poly pipe – low-grade non CSA pipe – least expensive at home hardware 300’ for \$90. Very light, affordable – tie it onto every hoop with bailing twine. With little spinning sprinklers from greenhouse supplier.

Slides: Oct 12 2012, Mizuna planted Sept 22.- crop into December. When snowstorm comes will brush snow off of greenhouse with push brooms. When storm season really comes, will take plastic off of greenhouse. In late Feb early march, will fish greenhouse plastic out of snow and put back on greenhouse (first he till in crop with BCS tiller).

3 crops a year in each greenhouse – move them 3 times a year  
4.5 person days of work to take down and set up 3 greenhouses

When using 4 x 100 ft greenhouses (ask for dimensions): Houses are 17x96 feet (DG)

Establishing greenhouses will help soil to dry out and get fluffy

Any spring crop you want you can do in these greenhouses. You could profit from a house like this with only strawberries.

Example set-up:

Site A – beet greens, carrots, whatever you want! (it is worth it to dedicate space to less high-revenue crops) – put in summer cover crop, till in in late summer and put in another crop

Take down greenhouses off spring crops in mid-April move to

Site B – plant tomatoes at a nice early date – you won’t get tomatoes in June, but you will get them in July. Less friendly to fungus, you can/will still get blight. Move in late Oct

Site C – planted mustard and arugula after tomatoes and ginger are done. We are still (in November) harvesting gorgeous greens.

**2012 PEI ACORN Conference  
The Rodd Charlottetown – November 22-24th**

This affords you to make mistakes – you can learn (if you don't have the skills or background experience)

Timing in the greenhouse is harder to predict, more variables with artificial heat. If it is sunny in October, it gets so much hotter in the greenhouse- it is more dynamic – you need to think about ventilation. David moved two of his greenhouses ahead of schedule, and the greens (mizuna) took off in a short time – and grew much too big!

Solution – cut top of mizuna off for salad, then cut bottom off. Regrowth is smaller, more cold harder, a little chewier, more resistant to powdery mildew (red salad bowl lettuce).

Best solution for powdery mildew – plant early, cut earlier than you want, regrowth is more resistant.

What is the lifespan of these greenhouses?

They are made up with 24 ft pieces of squarestock steel. David still has some from 2001 – they can run for awhile.

According to Norm from Multishelter solutions (a company that sells greenhouses to many producers in the Maritimes) – galvanized steel should last for 40 years. Norm's greenhouses are stronger, prebuilt.

Cost per square foot is so low, if you have anything close to effective marketing you should be able to pay for it twice in one year (with your crop profits) .

It is probably more expensive to just grow in the field simply because of margin of error.

He is working on a manual, and a Youtube video of putting them up. Norm sells a complete kit.

Question: Do you leave your rebar in the ground?

No – dangerous in the field.

Put a pipe wrench on your rebar and do a couple of 360s – spin it around and a 4 ft piece will come out (unless bound up in rocks). T-post puller, chain and bumper jack.

IT is worth it to establish a strong and successful drainage system in your greenhouse – place your greenhouse up and down the hill, not side to side, because of water – you don't want it running over your crops.

Salad growing around the edge – creates a vacuum seal – not useable.

Starlight Gardens (one of the best salad growers in the world)

**2011 NS ACORN Conference  
Holiday Inn Halifax Harbourview**

(did I say “the best in the world? I must have been carried away, lets just say “one of the best I know of” since I have not traveled the world looking at salad mix growers)

– outside of NYC) – became farmers, filled their whole property with greenhouses. Filled the whole greenhouse with greens – no paths – pick and walk on arugula – it doesn’t harm it. They made nearly the equivalent \$\$\$\$ of their former jobs of an architect + a lawyer from growing greens. The pathways are worth hundreds of dollars in lost growing space. Roll up sides and harvest inside – try and step between plants

1600 square ft of production in a 1700 sq ft house.

Question: Why do you uncover your greenhouses for the winter?

Hoops are thin and far apart – 6 ft apart – any snowload on plastic would crush hoops. Take plastic off for this reason. You can uncover the house in 10 minutes. Loosen ropes, leave them on, flop plastic to side + weight down with cinderblocks.

Question: Problem with rodents on plastic? No

Tim Livingstone: When there is risk of snow – take plastic right off. Planting in fall is like re-learning, not the same as planting in spring. If it is on a slope, the dynamics of it change.

Question: Why 100 ft – any reason for that?

Many greenhouses are engineered to be 100 Ft long by a structural engineer. Some growers put up 300Ft - longer the greenhouse the bigger the sail – wind force will snap the rope. Buying 100ft sheet of plastic easier, easier to move around.

Question: Do you need a 2<sup>nd</sup> layer of plastic floating over crops? Depends on where you are.

If you want to talk about landscape fabric, talk to David.