

Workshop Title: Season Extension Using Low Cost and High Tech (and lots of options in between)

Speaker & their title: Tim Livingstone, Strawberry Hill Farm

Executive Summary:

With regards to season extending technology, Tim is a user of the technology he speaks about. The presentation includes both low and high cost technologies. Tim explains why season extension is important and why we might consider to use it and mentions other options available that he does not do.

Notes

Slide

- 1..overview of the farm. Notice in picture I have row cover, a tunnel with poles(temp) metal hoop (semi permanent) main greenhouse (all year round use)and greenhouse we move around where broilers live.
- 3..pigs looking for goodies..
- 4..greens outside without temporary tunnels... 31st of Sept. Kale, brocolli and cauliflower planted the 31 of july...('oops , i am going back')
- 5..what went in our CSA boxes were 8 items and even in February our boxes offer quite a bit of variety.. 6 out of 8 winter boxes to date had greens. It is a 36.00 value and offered once every 2 weeks. Meats too~ Helps with customer retention. We take a break from boxes from March to June (we need this time off)
- 6..greens ie. mustard , kale, items...these are not planted in a mix because this way we can handle things (ie. if mold were to happen in one green, we could deal with it~) We are 2 weeks later than other regions.
- 7..A few years ago, I hooped with the aim being to have greens for Dec. 1st and uncovered when I could. I can report that outdoors, with one layer of plastic it is good until -10, and covered.
I heat the greenhouse with oil and wood.
8. Slide seeded and single layer over top..0 snow load..recently now 6 rows per with 5 foot wheel space ..bed is 30 in.
- 10 salad mix...outside and inside seems to work equally well. The temp tunnel gave me grief..wet and heavy snow..both went down..plastic hoops...bounced back up. It is stressful so, I am trying not to use them.
- 11 cherry tomato tunnel...withstands weather and is high enough..snow is not problematic 15 ft wide... we leave plants in as long as we can.
- Note** :If you wish to grow greens in winter, get a 30 foot tunnel tunnel wall picture...snow about 4 ft deep on the ground.
- 12...spinach works with single layer coverage..moisture seeped in, straw out, seeded in strips, oat seed in the straw...eek, hay on the sides, tilled and seeds came up ! Oatgrass is throughout !! Dug a trench along the sides ..no watering between Nov-Feb was needed. The issue is protecting for too much water logging

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13...main greenhouse pic..Here we have power, double polly, water from the house as we wash in here too. Hydrant on and have water. 30 ft wide, double polly. Bed preparation made easier with extra big door, (too big !)This year we rented a tiller and it was well worth it~

Jan 2014..left tomatoes until end of October . Ran oil...had plugs for the salad mix Planted in first of November and saw no growth in Dec-Jan..We had hoops and row cover from summer production and covered 3 layers...more effective than an insulating blanket. 15 wide can fold out three times. There is little sun in January.. so only uncovered 5-6 times in January. Toward the last of January ,growth began again. Can grow in February and by the end of Feb., we had greens for our baskets.

March 17th ..tank of fuel was used from mid October until March...The focus was tomato crop in Oct. Did recover costs...Spinach was seeded earlier, harvested in Dec., and you see 2nd planting ...efforts, 3,000.00 dollars. Aphids were a problem throughout the winter..early May the predatory insects came in and cleaned things up.

This year, goal is greens in Jan/ Feb..so, in Sept., we harvested everything...tomatoes (slide) old bread trays with paper in them..tomatoes sitting there...great at greening of these...(kept in another green house)

Slide using plugs ...seeded beds...clear plastic slide..hand layed, punch gives you an indent and seeds get leaves so the solution is to work plastic down over the seed. And spinach..2-3 seeds per cell.

Slide greens...planting on bio agric mulch..heat goes in the ground..gain a week clear vs black ?... / think the color helps the lettuce and the color helps against bugs..If you don't plant right away, weeds can overtake ...4-6 wk works for clear plastic.(half the life of black) and great for lettuce

more about structure...learned from New England fruit and vegetable conference the merits and downfall

- easy up, easy down, fertilize and then we put the hoops up, use a spike and doggy anchor...(Claude has a handout)..50 cents a sq/ foot. Ours was 300 sq. feet and works well for pepper production...has screening. By the end, I had 8-10 peppers per plant..phenominal difference...very light weight structure... doggy anchor at the pole ...not between the pole.....different views , inside,,peppers by 2nd week of july until the frost gets them.

Question...To what extent has Elliot Coleman influened you ? He is on the coast, his ideas are great but i cannot apply them where I am. He is using heat and I use heat and cost is recovered. More thoughts coming..

slide...on the left, the hoops went up over the winter and in spring, put plastic up, and big mistake....weeds took over so had no gain. So, I suggest you prepare the beds and I prefer to move it. Another problem we have at the bottom end , on a slope, wind causes hoops at the bottom to move around alot.

Poles..The tighter in they are, they will hold plastic well. If plastic raising sides, two rows under, raising the height , gave me more room to move. use row covers 50 ft wide.. It worked well for sweet potatoes.

slide...brocolii.. turnip, bok choy, bt greens, kolirabi..we covered it all with white cover..in the spring..big sheets, no hoops, we can take sandbags off one slide,

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cultivate and cover again...controls the weeds...bags around the sides only...works great...

melons..freshly transplanted, maybe hooped for a week but covered and it comes in august...

freezer...walk in freezer,, put in a heat pump in the cooler, without the guard(same system in a hotel rm\0 self contained...works very efficiently..problem was ice buildup ..

also,keeping simple heaters, and fan and household thermostat, thermometer in every storage..very simplistic, using diesel as fuel source.

Shop overhead area holds our sweet potatoes with max. temp 65 degrees 5-6 days , then 55 to 60 degrees to keep them and we kept squash in there also.

Slide 135,000 btu, tunnel, single layer, we put a heater in overnight

Truckbox, with reiffer on the front, put lettuce in here , good for storage..3,000 cost

relatively accessible, not great for heat.... but it does work

two wrksheets are available by Claude on the NB website within a month on greenhouses.

One final note, I do suggest your tunnells are kept well apart or you will have snow probsl

As for greenhouses on rail system...not sure of its merits as I wasn't able to take it where I want it.