Strawberry Production and Marketing at Full Belly Farm

Farm Background

- **Located in Monkton Vermont**
- **We started there in 2017, has been a farm stand/u-pick farm since early 90s**
- **On site farm stand = 80% of strawberry sales**
- **Wholesale to coops and restaurants = 20%**
- **3 acres of strawberries and 15 acres of mixed crop production annually**

Strawberry Specs

- **3 acres of June bearing strawberries**
- **about 50% sold through u-pick**
- **½ acre of everbearing under low tunnels**

U-Pick Marketing

- **Dynamic marketing approach. Depends a lot on current and coming crop condition and weather.**
- **Social media - we post frequent updates leading up to strawberry season and regular updates on picking conditions so people know what to expect.**
- **Website - easy to find information about current hours and picking conditions, updated frequently**
- **CSA members - u-pick is included in our free choice CSA and members get the first alert on u-pick opening and whole flat sales**
- **Local news, if we have a bumper crop**
- **Word of mouth**

- Make sure u-pick employees can correctly answer questions about spraying practices on strawberries.
- We also have a pamphlet available with more detailed information about our growing practices, and lots of crop specific info on our website.
- Added a creemee stand in 2022, serving strawberry creemees made with our berries
- Complementary bought-in items - shortcake biscuits, heavy cream, etc

Pre-Picked Berries

- **Customers prefer quarts but we sell in pints when we have fewer berries.**
- **When we have excess, we sell 8 quart flats out of the farm stand.**
- **Good way to move volume if bad weather dampens u-pick turn out and we need to get fruit out of the field.**
- **This option is appreciated by customers who have mobility issues, or don’t have time to come pick their own.**

Comparing Different Strawberry Production Systems

Matted Row

- 7500 plants per acre
- Lowest cost of establishment inputs but high labor
- Weed control difficult. Fingers, tines, sweeps, and lots of hand work
- We use tall raised beds. Not necessary on better drained soils
- Can be difficult to control density.
- Customer friendly

Bare Root Through Plastic

- 15,000 plants per acre
- Hand planted, in late June - early July
- Planting too early leads to too much growth and runner removal
- Runner removal is time consuming but easier than weeding.
- Establishment in summer can be difficult. Try to plant in or just before rain.
- Day neutrals

Plugs

- Planted mid August - early September on plastic
- Plants are expensive, but lowest labor expense
- Very little runner removal
- Earlier flowering
- Can be planted with waterwheel
- Probably best yields we have seen
- Less variety selection
- Quality of plants vary
- Concerned about Neo-P or Neopestalotiopsis

Fertility Management

- Yearly soil tests
- Much of nutrients supplied through dairy manure
- Supplemental nutrients through drip. Mostly nitrogen but sometimes needs sulphur and magnesium
- Weekly nitrogen 5-7 lbs/acre
- Don’t be afraid of spring nitrogen, but apply it accurately.

Tissue Testing for Fertility Management

- **Plant tissue/petiole analysis is most important way to insure continued plant health. 1-2 times in late summer and biweekly bloom through harvest.**

- **Using North Carolina Department of Ag lab for testing. Very good strawberry specific recommendations and petiole nitrate test.**

NCDA&CS Agronomic Division Phone: (919) 664-1600 Website: www.ncagr.gov/Divisions/Agronomic-Services Report No. FY25-P000569

Predictive

Plant Tissue Report

Plant Tissue Analysis Section

Client: Stephen Park
686 Davis Rd
Hinesburg, VT 05461
Sampled County : OUT OF STATE

Advisor:

Sampled: 09/05/2024
Received: 09/09/2024
Completed: 09/11/2024

Farm: Not Provided

PALS #: 543319

PALS #:

Sample Information

ID: June25
Crop: Strawberry
Growth Stage: E
Week: 0
Plant Part: M
Plant Position: 0

Nutrient Measurements are given in units of mg/kg, unless otherwise specified.

N (%)	P (%)	K (%)	Ca (%)	Mg (%)	S (%)	Fe	Mn	Zn	Cu	B	Mo	NO_3-N
3.16	0.29	1.98	0.83	0.29	0.16	193	51.0	18.5	5.37	32.5	-	4130

Interpretation Indexes

N	P	K	Ca	Mg	S	Fe	Mn	Zn	Cu	B	Mo
54-S	61-S	65-S	58-S	56-S	52-S	64-S	52-S	52-S	55-S	57-S	-

Other Results

Na (%)	Cl (%)	C (%)	DW (g)	Al
0.01	-	-	-	110

Nutrient Ratios

N:S	N:K	Fe:Mn
19.8 : 1	1.59 : 1	3.79 : 1

Agronomist's Comments:

The petiole nitrate nitrogen (NO3-N) target range for the weeks since full bloom are: week 1 is < 500 ppm; for weeks 2-3 is 2500-4000 ppm; for week 4 is 2000-4000 ppm; for weeks 5-8 is 1700 - 3200 ppm; for week 9 is 900 - 2800 ppm; for week 10 is 900 - 2500 ppm; for week 11 is 600 - 1700 ppm; for week 12 is < 900 ppm.
The NCDA&CS recommendation is to inject the equivalent of 5.25 lbs. N per acre per week when NO3-N is within the recommended range or to inject the equivalent of 7 lbs. N per acre per week when NO3-N is below the recommended range.

Frost Protection

- **BE PREPARED!**
- **Know your specific micro-climate:**
  40 degrees could mean frost.
- **Back up parts, sprinklers, gaskets, pump etc.**
- **Overhead irrigation is definitely most effective from our experience.**
- **Row cover prevents middle of the night work but not always good enough. Wouldn't have been effective in 2023, and lost some early flowers in 2024 under double covers.**
- **Typar is much better and easier to handle than remay, more expensive and lasts longer.**

Pest Control Methods

- If we're uncertain about a pest or pathogen we always send plants to be tested.
- We employ preventative strategies and chemical controls when needed.
- Minimum of 3 year rotation.
- Biofumigation for soil borne pathogens.
- Avoid planting in low wet areas.
  Make high raised beds.

Tarnished Plant Bug

Nymph causes fruit damage during bloom

Preventative Strategies:

- **Mow around fields edges consistently (or don't mow at all).**
- **Early fruiting varieties are less likely to be damaged by nymphs**
- **Scout for nymphs as soon as there are flowers**

Chemical Control

- **One spray application during bloom after finding nymphs**
- **Have seen no effect with organic sprays, possibly Azadirachtin**

Botrytis Gray Mold

Starts on flowers during bloom and spreads to fruit

Preventative Strategies

- Plant for good airflow, avoid overly vigorous varieties, Matted row can be dense
- Plant for ease of harvest
- Keep field clean of overripe and spoiled fruit during harvest, especially u-pick areas

Chemical Controls

- Spraying during bloom provides best protection.
- During bloom we alternate between Pristine or Switch (both conventional) and Oxidate rotated with Botrystop + Regalia (organic).
- Only organic sprays after fruiting.

Cyclamen Mite

- Comes from nursery stock. Overwinters on plants but not in soil.
- Extremely small and difficult to spot.
- Once established on large plants there is very low chance of having good yields.

Preventative

- Inspect bought-in plants thoroughly
- Buy from nursery you trust

Chemical Controls

- No effective organic spray options and few conventional. Very high spray volumes and pressure. 300+ gallons per acre.

Strawberry Seed Beetle on Seascape

Favorite Varieties

- Cavendish
- Wendy
- Galletta
- Jewel
- Darselect
- Cabot
- Flavorfest


Full Belly Farm
Monkton, Vermont