

The Art, Science, and Craft of Profitable Onion Production



DEREK CHRISTIANSON
BRIX BOUNTY FARM

[HTTP://WWW.BRIXBOUNTY.COM](http://www.brixbounty.com)

DEREKCHRISTIANSON@GMAIL.COM

NOFA SUMMER CONFERENCE

SATURDAY AUGUST 12, 2017

Nutrition & Flavor

While considered by some a commodity... onions are a kitchen staple in many cultures and demand for local production, while clearly not matching the fair-weather mania of tomatoes or sweet corn, is strong.

By addressing key “leverage points” along the production timeline we can ensure bountiful and profitable production annually; contributing a significant potential profit for small scale growers... of course it all depends on your markets, it all depends on markets and your production systems.



Pyruvic Acid & “Sweet” Onions



Consumers Seeking “Sweet” Onions - Vidalia “Demand”

Low Sulfur Soils

<http://extension.psu.edu/plants/vegetable-fruit/news/2010/factors-affecting-pungency-in-sweet-onions>

We don't focus on low Sulfur onions at Brix... in fact we emphasize Sulfur in our fertility program

“Selenium & Sulfur to Produce Allium Functional Crops”

<http://www.mdpi.com/1420-3049/22/4/558/pdf>

Sulfur & Selenium



Elemental Sulfur – Tiger 90 Organic

Sulfur pastilles: 20-40# per acre annually to build S levels...
require soil biology to release, which require warmer soil
temperatures

Sulfate forms of Sulfur

Calcium Sulfate (Gypsum) – 200# per acre will supply ~34 # S

Sul Po Mag (K-Mag or Trio)

Potassium Sulfate

Selenium – Sodium Selenite, Sodium Selenate

Cabernet Onions – August 3, 2016



Evaluating Yields and \$ per bed foot



Cabernet Onions 2017 – a good fresh onion

Trial 6” spacing in highest fertility field

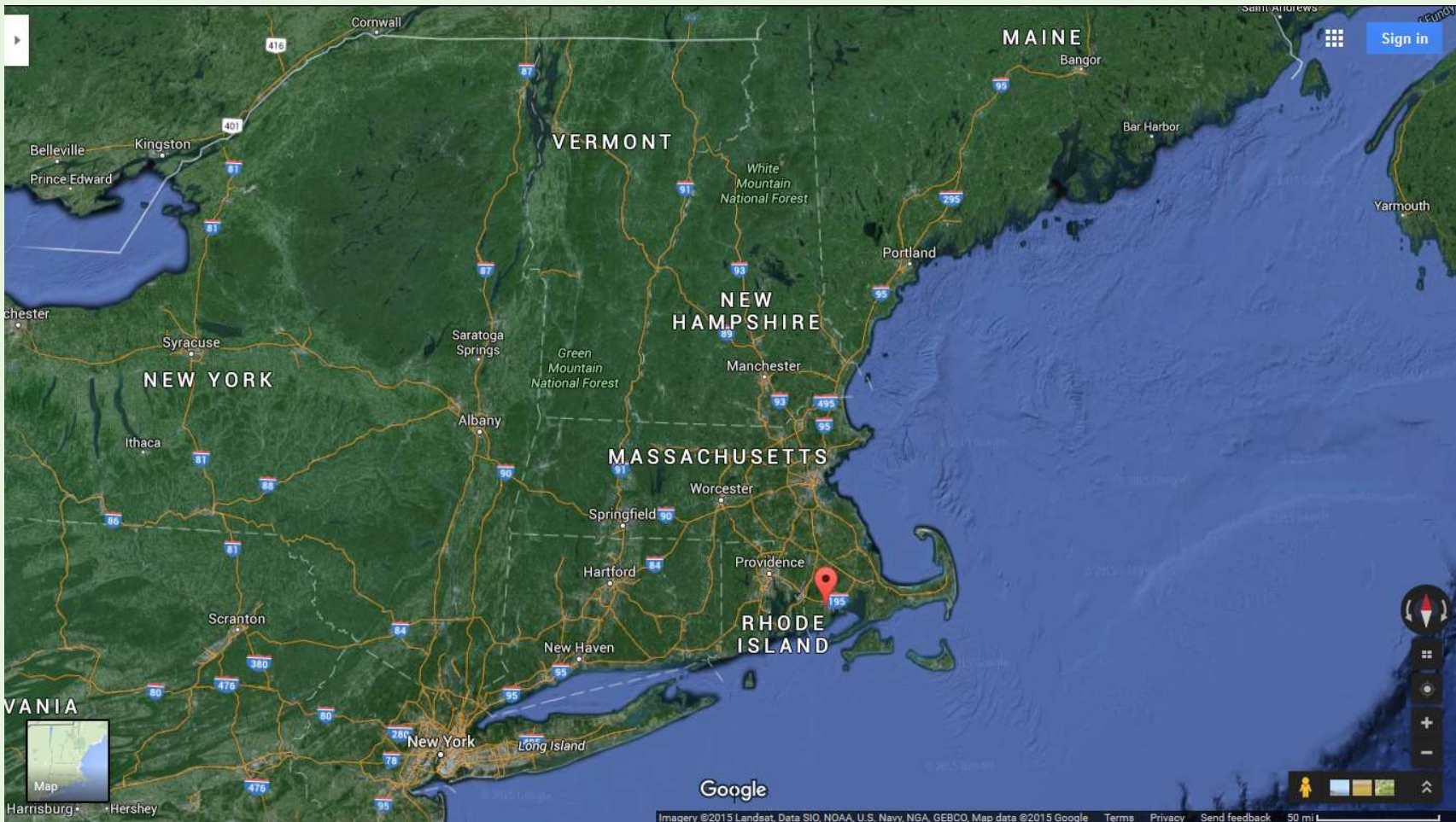
Yields = 21 heaping pints

Selling at \$3 per for early onions (late July)

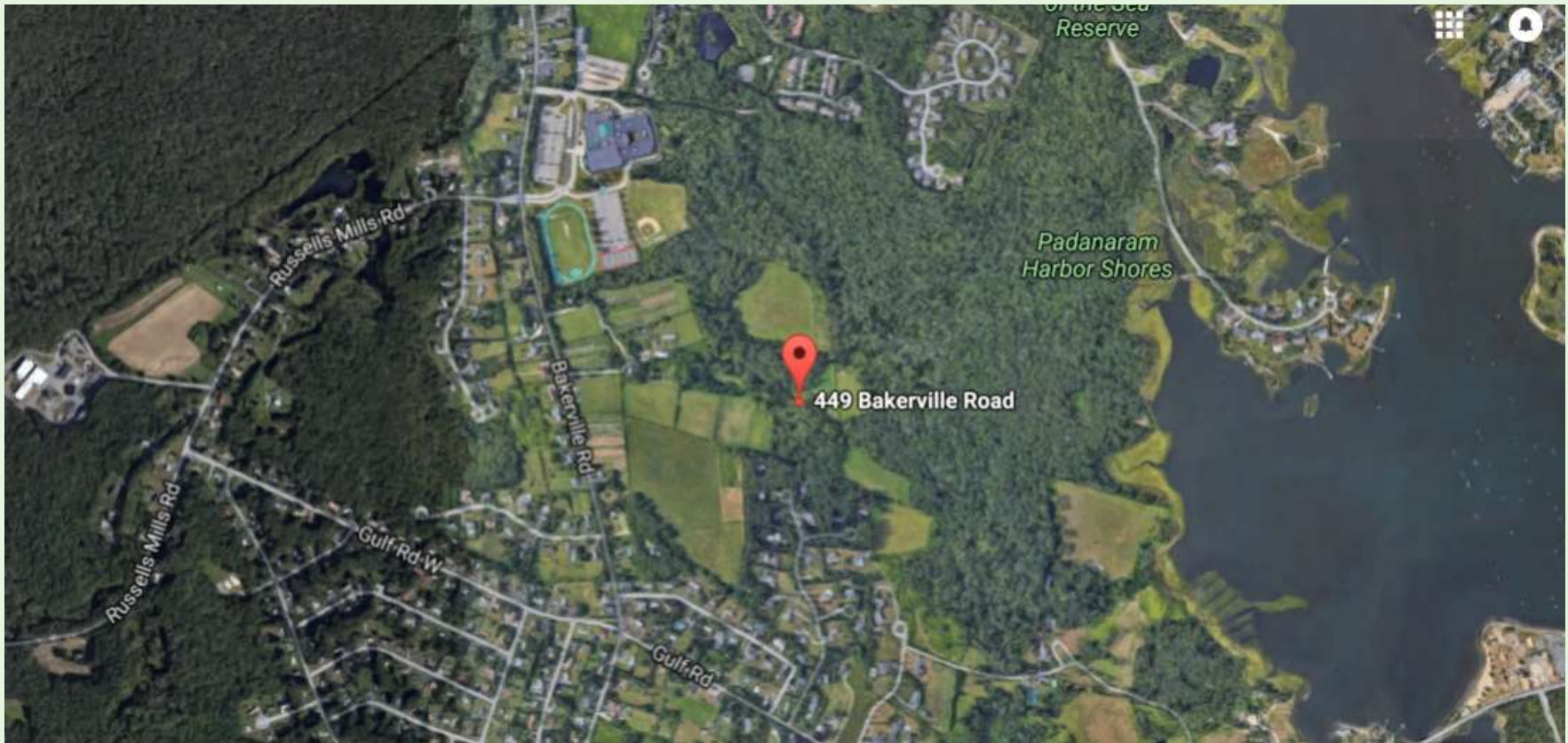
$\$63 / 6 \text{ bed feet} = \$10 \text{ plus per bed foot}$

... consider post harvest costs, including storage, potential losses, and “topping”

Location: SE Coastal Massachusetts



Google View – Brix Bounty Farm



Context – Brix Bounty Farm, Dartmouth, MA



- Dartmouth – population ~35K, New Bedford 95,000
 - Agricultural Community, UMass Dartmouth, Coastal, Summer Population
- Derek Christianson – growing veg in NE since 2002.
- Brix Bounty Started in 2008 – Leased Land
 - Moved to larger acreage in 2014 - ~10 acre footprint
- 3 Full-time Farmers “in-season” including myself
 - 1-2 additional part-time during the high season
- All Produce Direct Marketed - ~\$185K in Veg Sales in 2017
 - Summertime CSA - \$42K
 - (Honor System) Farmstand - \$124K
 - Farmers Market (downtown NB) – \$10K
 - Wintertime CSA - \$10K

Context - Brix Bounty FY17 Budget Highlights



- Veg Income: \$185 K + Other Farm Income: ~ \$5K
~7-8 acres in production w/ some 2x cropped, 3 full-time farmers in season, 1-2 part-time, + a few harvest helpers...
- Expenses (top categories):
 - Personal Salary (Owner's Draw) \$40-45K (24%)
 - ✦ 3500 hours/year... as many as 90 hours/week + in high season
 - ✦ Katie (wife) is primary caretaker for our 3 children, support for long hours
 - Labor \$65K – continue to increase wages as farm budget allows (35%)
 - Rent \$12-14K (note: includes some hired tractor work)
 - **Fertility \$18K (~10%)**
 - Seeds \$9K (~5%)
 - Supplies \$9K (~5%) Capital Improvements *varies – \$5.5K in '16 (3%)
..... ~\$30K in '17 (fieldhouse & farm truck)

Considering Costs – Materials are “in-expensive”



Full Spectrum Fertility in '17 at \$2K/acre for materials
this includes everything from cover crops, potting mix, soil testing, to amendments...

Supercharge a bed at \$400/acre for amendments/fertilizer

Sidedress a bed at \$100-\$200/acre for materials

At Brix ~1,200 sq./ft. beds (ca. 200' x 6')

Yield 500 marketable heads of Lettuce

\$2,000/acre > \$55 per bed or \$.11 per head

At (“low yield”) 4# per bed foot onions - cost \$.07 per pound

Supercharge cost of \$12 per bed or < \$.02 per pound

Soft Rock Phosphate – Spring 2015



“Qualifying Considerations” – Water Decisions



- All of our crops are direct marketed, we do not maintain wholesale accounts, and the farm can handle varied maturity dates each season.
- Our coastal location is less extreme than other parts of Massachusetts, lower summer temperatures.
 - In 2016 we received ~5” of rain from June 1 – Sept 15, better than some... in 2017 we have received <1 inch of rain in the last 5 weeks
- Peak marketing Season is August... we don’t grow massive amounts of storage crops for the late fall/winter.
- We do occasionally experience crop failures...

Variety Selection

At Brix we select varieties for yield, marketability, and highlight diversity

Storage is less critical for our market season



Current Onion Variety Selection at Brix



Early Mini Onions - Late June/July

Eclipse & Purplette

Fresh (early) Onions – Mid July – August

Ailsa Craig, Cabernet, Sierra Blanca, Tropea

(trials '17): Zoey, Blush

Storage Onions – September onward

Cortland, Patterson, Yankee, Red Hawk, Red Wing

Photo 6.20.2017



Cluster Planting

4 seeds/cell in 98's
(aim for 3 plants/cluster)

tp – 3 rows/bed
9" spacing in row

Mini-onions – 128's
(or high fertility beds)
6" spacing in row



Growing Onion Starts



Prefer cluster planting from cells b/c of efficiency at TP...
alternative > nicer onions from open trays set individually

Target starting date – final week of February – early March
could start as early as Feb 1 with heated prop house

Target TP date – early April through early May ...
depending on the season

Target – maximize top growth before the solstice

Greenhouse Onion Fertility



We use Vermont Compost Fort Vee

Either drench or (“inject” with Hozon”) additional N (and calcium ?) if looking tired and/or delayed transplanting...

2007 spring April snowstorm in NY > delayed onion transplant

Now, typically standard to inject to improve TP vigor

Fish – Organic Gem or Neptune’s Harvest

Liquid Nitrogen

BioMin N - <http://jhbiotech.com/docs/Biomin-N.pdf>

Field Fertility

Include focus on Calcium
early season N & P ...
may use row cover to
accelerate early growth

Sidedressing

Late May/Early June
if necessary
(avoid late Nitrogen)

Late Sept Scallions 2016



Strategies for Onion Maggot Control



Blue Sticky
Cards >
Monitor
& Trapping

Beneficial
Nematodes
*Steinernema
feltiae*



Cultivation, Cultivation, Cultivation



- 1st cultivation: scuffle hoe & wheel tracks
 - 2nd cultivation: handweeding
 - 3rd cultivation: scuffle hoe & wheel tracks
 - (optional sidedressing beforehand)
 - 4th cultivation: cobra & handweeding (aeration)
 - 5th cultivation – wheel tracks only
 - 6th cultivation – handweeding if necessary
 - This final cultivation, especially important for long season varieties
- Or... black plastic, mechanical cultivation, etc...**

July 15 2016 – Leeks & Carrots



Pests & Diseases



Root Maggots

Thrips

Purple Blotch (Alternaria)

Shallots



Harvesting & Marketing



Important to consider labor costs related to harvest & post harvest (significant for most onions)...

We target 1 minute per bed foot (for the crew) for fresh onions

We bunch early onions if we are trying to make an impression and if tops are nice quality

Otherwise top & cut roots in the field...

Spray clean for early fresh types

Otherwise “dry” for later types

Reduced “sorting” times



We often sell our onions & shallots by the volume...

½ pints for shallots - \$3

Pints for early mini onions - \$3

Quarts for onions - \$5

Sorted sizes: Small (\$.50 ea.), Medium (\$.75 ea.),

Large (\$1 ea.), Jumbo (\$1.25 - \$1.50 ea.)

Target \$2+ per pound for Onions



Takeaways & Leverage Points



Solid Transplants

Plant Population (Root Maggot Control)

Early Season Growth

Weed Management

Harvest and Post Harvest Efficiencies

Thank You



For more information on this presentation contact:

Derek Christianson

Brix Bounty Farm

1 Seth Davis Way

Dartmouth, MA 02748

508-992-1868

derekchristianson@gmail.com



FRESH VEGETABLES & COMMUNITY EDUCATION

