



Foliar Sprays – Mid Season Corrections

A GUIDE TO FOLIAR SPRAY SELECTION AND APPLICATION

(SEE ALSO SUPPLEMENTAL HANDOUT)

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Caution, Warning, Danger

Always error on the side of **CAUTION**, especially when testing new materials

WARNING: Sprays which are too concentrated or applied at the wrong time can burn plants. Too concentrated can be far worse than too little...

DANGER: Read Labels and Follow Safety Precautions

Brix Bounty Farm

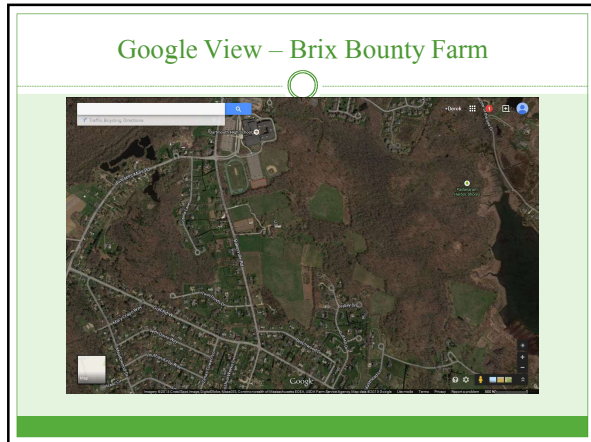
Growing a Foundation for Health Starts in the Soil

Harness Nature's Bounty –> Employing Nature's Diversity

Passion for Growing Food (Working in the Field)

Exponential Growth in Health Care Costs

Market to Our Immediate Community



Brix Bounty Farm – Labor & Experience

Derek Christianson – Growing Veg Since 2002.
 Brix Bounty 2008, Relocated (2 miles) in 2014

~7 acres under production w/3,500 sq. ft. under plastic

2 Full-Time Employees (March > Nov + winter)
 1 Part-Time Seasonal (May-Aug) + 3-4 workshares
 David King – Tractor Work – primary tillage

Productivity & Profitability

Seeds
 Soil
 Sunshine
 Rain
Labor
 (\$) Customers
 =
 Veggies

11.17.2015

Why Utilize Foliar “Nutrition”

At Brix Bounty > Our Aim is to Produce Top Quality Nutrition...

Foliar Sprays are one “Tool” in the Toolbox

They are Multi-Dimensional – Opportunity for Observation

Help to Finely Tune Our Crops to Capture and Improve Upon Solar Energy & Nature’s Bounty



Summer Cabbage ‘15– Farao, SR80, Caraflex

- Succession #2 - Seeded in GH 3.30 into 72's 1 seed/cell
- Bed Prep:
 - Pick Rocks 4.18 & 4.25 w/chisel plow and disking...
 - 4.25 spread Kreher's composted chicken manure
 - 4.29 "min-mix" and soft rock phosphate & final tillage
- Transplanted 4.30, hooped & row covered AG-19
- Cultivated *5.18, *5.26 removed row cover & handweed
- Cultivated - 6.05 wheel track only
 - Survey 6.05 – Zero Losses to Root Maggots or TP Failure
- Harvest Started for SR80 - July 2nd ~ July 9th

Foliar Sprays are Not a “Silver Bullet”

Don't Generally Replace Soil Amendments

May Impact Crop Growth and Energy
Male vs. Female
“Switching toward Reproductive”

Results Not Guaranteed...

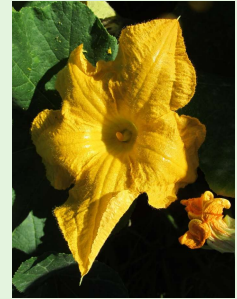
Successful Foliar Sprays

Spray at the Right Time of Day (Early or **Late**)

Leaf Temperature Makes a Difference

Better Calcium Levels in Plants
=
Better Foliar Performance

Rule of 2% - Safe Concentration
(~12 oz. per 4 gallon backpack)
Follow Label Instructions



6 Mid-Season Foliars to Consider

- 1. Basic Recipe – To Continue to Build Momentum
- 2. Addressing Specific Mineral Deficiency
- 3. Reducing Nitrates – Countering a Nitrogen Flush
- 4. Promoting Flower Set
- 5. Promoting Fruit Quality
- 6. After a Significant Flooding Event



1. Basic Foliar Recipe (4 gallons clean water)

- 2-4 oz. Molasses (OG Sugar Source)
- 4-8 oz. Organic Gem Fish (or other liquid fish) {N + P} or 3-6 oz. Sea-Shield (AEA) {+Ca} or 2-8 oz. On-Gard N
- ½ - 1 oz. Liquid Kelp
- ½ - 2 oz. Sea-Crop
- Fulvic Acid, Soluble Humates, or the like...
- “BioLink Micronutrients” or Traces (see handout)
- Couple of drops of Yucca (Therm X70)

And ...



2. Addressing a Nutrient Deficiency (e.g. Zinc)

Say Low Soil Zinc, High Soil Phosphorous
and a “cool start to the season”

Preference is for soil applied Zinc Sulfate (36% soluble)
or added to a starter...

Foliar Zinc - 1# Zinc Sulfate per Acre
(~1/4-1/2 # actual Zinc)

Spray at (.5% solution) = ~2 oz. Zinc Sulfate per backpack

Add “chelating” agent of choice and “leaf exposure time” matters



3. Reducing Nitrates – Nitrate Reductase Enzyme

What if Yikes... Aphids ->

Base Spray – Omit Fish or Other N
Sodium Molybdate (39% Mo) at 2 oz. per acre
Magnesium Sulfate at 16-32 oz. per acre
Iron Sulfate at 8-16 oz. per acre
Boron (Solubor) at 8 oz. per acre
Copper Sulfate at 8 oz. per acre

+ Chelating Agent of Choice



4. Promoting Flower Set

Emphasize the Following:

Ammonium Forms of Nitrogen (Reams)
Phosphorous

Traces – Boron, Cobalt, Copper, Molybdenum, Manganese,
and Zinc

Apple Cider Vinegar ...



5. Promoting Fruit Quality

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Calcium
+
Boron

Needs to be Sprayed when Fruit is Small
Before Cell Expansion

? Potassium ?
? Cobalt ?



6. After Significant Flooding

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Our Experience – Well Drained Soil is Essential !
<2% of our fields are at risk of a major event

Possible to Supplement
N,P,K Short-Term
+
“Full-Spectrum”

See U FL Tip Sheet in Handout

Phylloplane Biology

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Strive for Promoting “Good” Biology

Biological Inoculants (these are just a few)
Micro-5000 Complete Nutri-Tech Foliar

Compost Tea

Selecting between: Centrifugal, Diaphragm, & Piston Pump

Compost Junkie.Com
http://www.compostjunkie.com/support-files/foliar_applications_ct.pdf

? The Future ?

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Bio-fortification w/ Selenium
{Soil Applications in Finland}

Selenium & Sulfur Pathways – Very Heavy Gypsum
Applications may Reduce Se Uptake for a Period

Animal & Human Health

?? A Case for Foliar Sprays ??

Focused Use of a Limited Resource

Another Point for Consideration - Mixing the Spray

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Homogenizing
Energizing
Sharing Soul
Straining
Seasonal

2.2.2016

Resources

**6 Recommended Foliar Spray Resources
(See Handout)**

**Question
Observe
Reflect – Learn
Adjust
Repeat**

Final Thoughts - Building Fires with Work

Consider labor inputs involved in agriculture...

Are there limiting factors which reduce rate of return on this labor?

If so, addressing these limiting factors is a step toward productivity and profitability.

Ask the right questions? What are you passionate about?

Application Methods - Equipment & Supplies

- Hand Held Sprayers
- Backpack Sprayers
- Motorized Backpack Sprayers
- Tractor Mounted Sprayers
- Calibrating Backpack Sprayers (3 links from Extension)
 - http://pubs.ext.vt.edu/456/456-502/456-502_pdf.pdf
 - http://extension.oregonstate.edu/linn/sites/default/files/pnw_320_calibrating_and_using_backpack_sprayers.pdf
 - https://www.bae.ncsu.edu/topic/agmachine/turf/pubs/ag-576-calibrating_backpack_sprayer.pdf

Sources and Manufacturers for Sprayers

- Cifarelli - <http://www.cifarelli.it>
- Dramm - <http://www.dramm.com/html/main.isx>
- Jacto - <http://www.jacto.com/>
- Solo USA - <http://www.solousa.com/>
- Other: Birchmeier, Chapin, ECHO, Hudson, Osatu, SP Systems
- Udor, Hypro
- Tractor Mounted: Demco, Fimco, Hardi, Rittenhouse
- OESCO - <http://www.oescoinc.com/> (Conway, MA)
- PikeAgri Labs – Refractometers, etc. - <http://www.pikeagri.com/>

Upcoming Educational Events

Hugh Lovel – March 5-7, 2016
Warren, Rhode Island

High Tunnels Fertility – March 14, 2016 (NOFA/Mass)

NOFA/Mass Webinar – 7PM - Tuesday April 26, 2016
Ensuring Nitrogen and Potassium Fertility Through the Growing Season - Initial Bed Preparation, the Economics of Compost, and Side Dressing

NOFA Summer Conference 2016

Thank You

Handouts & Presentation
Available at www.brixbounty.com

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