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Fruit and Vegetables

Asparagus

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Typical Usage of Our products

Typical Agro Liquid Recommendations:

Band Application (per acre):

High NRG-N	17 gallons
Pro-Germinator	2 gallons
Sure-K/Kalibrate	10 gallons
Micro 500	0.5 gallons

Spring – before growth

Foliar Applications (per acre):

ferti-Rain	2 gallons
LiberateCA	1 qt

At fern x 3 applications

Asparagus

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Asparagus

What do you need to know?

- Planted as a ‘crown’ or ‘plug’
  - Grown from seed by someone else
  - Limited Varieties
- Harvested ‘cut’ May / June
- Crown will last up to 30 years
  - Depending on the variety
- After harvest, fern grows to replenish for next season

Asparagus

Removal Recommendations	
Nutrient	lbs/A
N	224.0
P	112.0
K	284.7
S	0.0
Ca	0.0
Mg	0.0
Mn	15.0
B	1.0
Cu	3.0
Zn	0.0
Fe	0.0

- Yield Goal: 3.5 Ton / Acre

Crop Micronutrient Response	
Mn	Low
B	Low
Cu	Low
Zn	Low
Mo	Low
Fe	Med

Asparagus
Location: Ontario

AgroLiquid Program (3.5 ton/acre yield goal)

- Spring Application
  - 6 Gallons High NRG-N
  - 4 Gallons Pro-Germinator
  - 12.25 Gallons Sure-K
  - 2 Quarts eNhance
  - 1 Quart Micro 500
  - 1 Quart Manganese
- Fall Application (Post Harvest)
  - 19.5 Gallons High NRG-N
  - 4 Gallons Pro-Germinator
  - 9.75 Gallons Sure-K
  - 2 Quarts LiberateCa
  - 2 Quarts eNhance
  - 2 Quarts Micro 500
- Fall Application (Foliar on fern)
  - 4.75 Gallons fertiRain
  - 0.75 Quarts Boron
  - 1 Quart Copper
- Application Timing
  - Spring Application:
    - Streamer nozzles, pre harvest
  - Fall Application
    - Ground application after harvest
    - Foliar fed to fern

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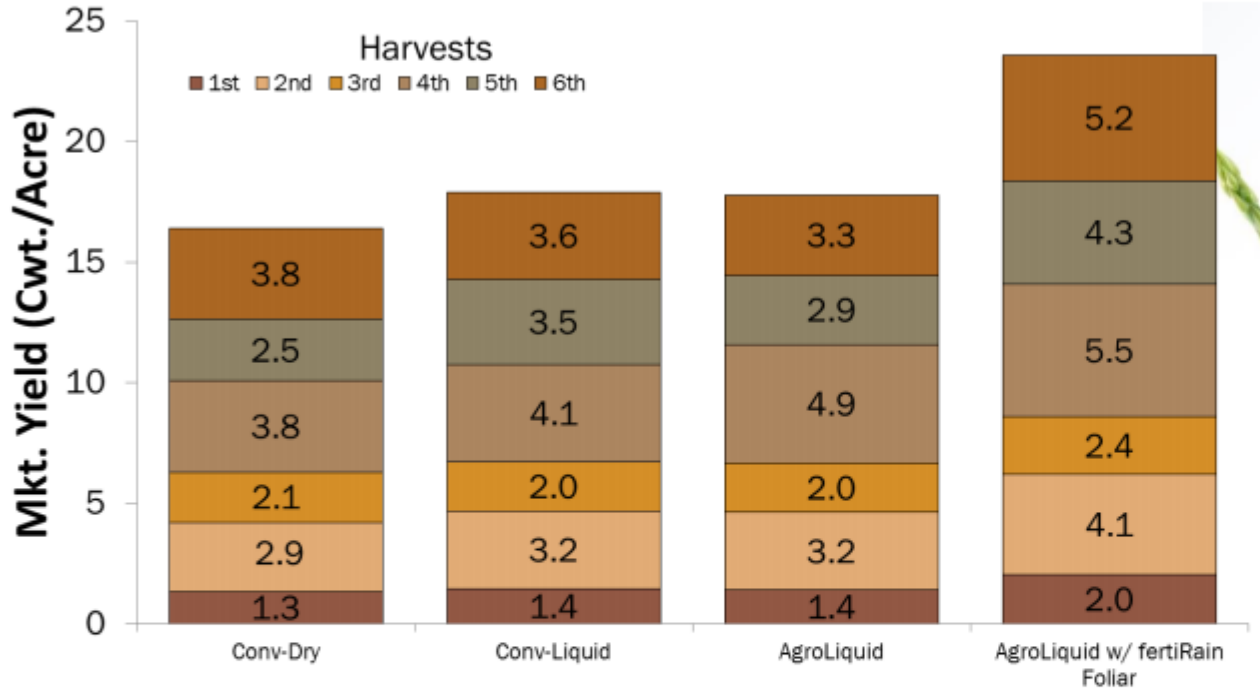
Asparagus Yields – Now & Later

North Central Research Station 2013



Nutrient	#/Acre
Nitrogen	110
P2O5	45
K20	75

Jersey Knight (For complete trial details see 2013 ACLF Research Report)

In-season applications of AgroLiquid fertilizer can lead to more uniform yields than conventional fertilizer options NOW. Including foliar applications of fertiRain after the asparagus goes to fern each season will help your yields LATER, the following season. Many years of research at the North Central Research Station shows these changes lead to more efficient use of plant nutrition is not only possible, it really works.

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Typical Usage of Our products

Blueberries

Typical Agro Liquid Recommendations:

Band/Drip Application (per acre):

High NRG-N	15 gallons
Pro-Germinator	4 gallons
Sure-K/Kalibrate	5 gallons
Micro 500	0.5 gallons
LiberateCA	0.5 gallon

Foliar Applications (per acre):

Sure-K	2 gallons
ferti-Rain	2 gallons
LiberateCA	1 qt

At fern x 3 applications

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BLUEBERRY FRUIT DROP: WASHINGTON STATE UNIVERSITY

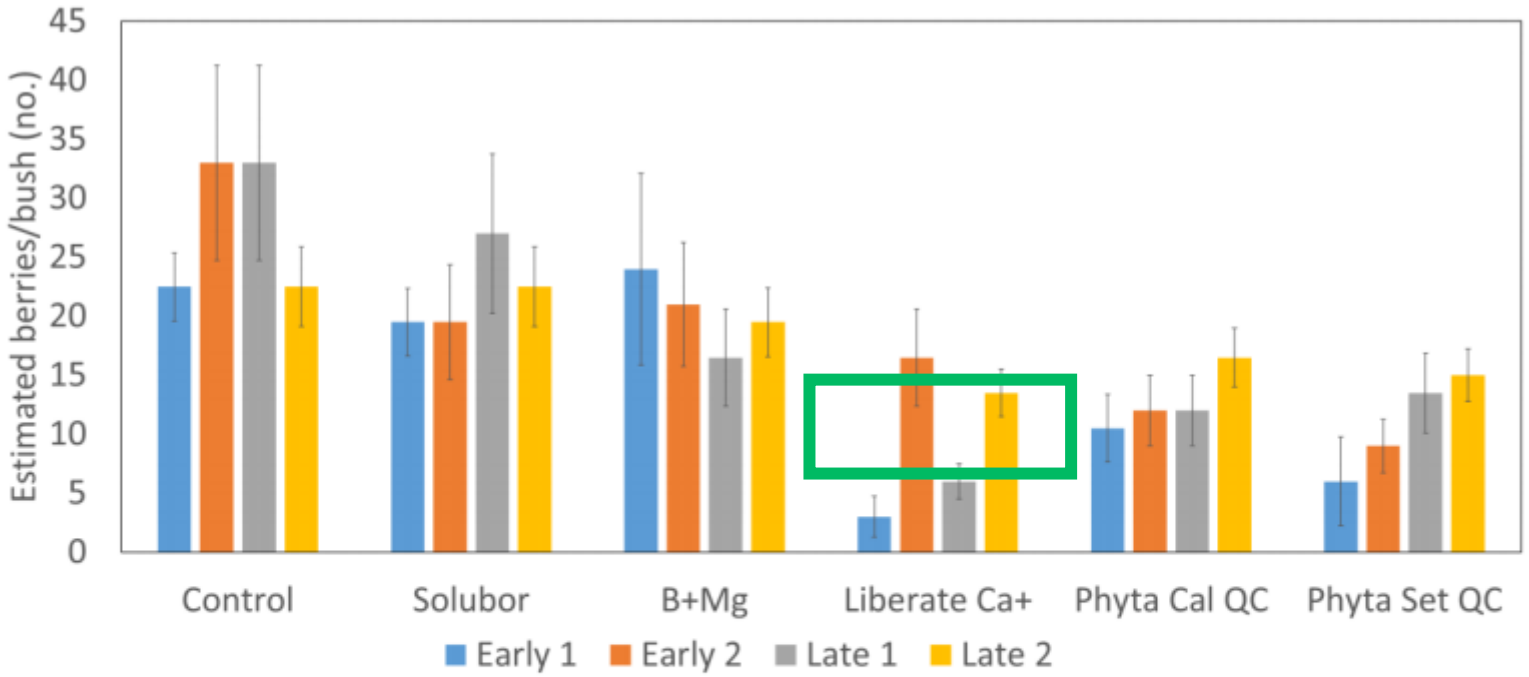

Figure 3: 'Draper' fruit drop measured as berries dropped per 1.5ft x 1ft grid square [two random samples per plot, measured twice per site (i.e, "Early" and "Late")] in two experimental sites located in Whatcom County, Washington. Treatments included: untreated (control), "high" boron (Solubor), MicroLink B+Mn, Liberate Ca, "high" calcium (Phyta Cal QC), and "high" boron+calcium (Phyta Set QC). Figure representes 2016 data, as limited fruit drop was observed in 2015.

- Initial analyses of the data do not indicate a significant difference in fruit set between treated and untreated (control) 'Draper' or 'Bluecrop' plots.
- However, we did see positive results in reducing 'Draper' drop with foliar applied calcium in 2016 (Fig. 3).

Typical Usage of Our products

Cabbage

Typical Agro Liquid Recommendations:

Transplant solution (per acre):

Pro-germinator	3 gallons
Micro 500	1 gallon
MicroLink Manganese	0.125 gallons
MicroLink Boron	0.125 gallons

Side-dressed (per acre):

eNhance28%UAN	40 gallons
Pro-germinator	6 gallons
Sure-K	9 gallons

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Typical Usage of Our products

Carrots

Typical Agro Liquid Recommendations:

Transplant solution (per acre):

Pro-germinator	3 gallons
Micro 500	1 gallon
MicroLink Manganese	0.125 gallons
MicroLink Boron	0.125 gallons

Side-dressed (per acre):

eNhance28%UAN	40 gallons
Pro-germinator	6 gallons
Sure-K	9 gallons

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CARRON FERTILITY PROGRAM COMPARISON: ST. JOHNS, MI (2013)

Treatment		Rate/A (gal or lb/A)	"Method of Application"	Nutrient* lbs/A	NUE**	Yield Tons/A
1	0-0-60	395#	PPI	407.9	107.4	21.9
	10-34-0 + 28% UAN	10 + 10	PPBC			
	28% UAN	15	Side dress			
	28% UAN	15	Side dress			
2	HN + PG + SK + Micro 500 + Mn	14 + 10 + 10 + 4 qt + 2pt	PPBC	140.5	341.5	24.0
	HN + PG + Sure-K	10 + 3.5 + 10.4	Side dress			
3	PG + M-500 + Mn	5 + 1 + .5	Surface Band	140.5	308.8	21.7
	HN + PG + SK	12 + 4.5 + 10.4	Side dress			
	HN + PG + SK	12 + 4 + 10	Side dress			

*Micronutrients not included in total fertilizer per acre calculations. **NUE = Nutrient Use Efficiency = Lbs Yield / Total Lb. N,P,K&S as Fertilizer Applied, HN = High NRG-N, PG = Pro-Germinator, SK = Sure-K, PPI = preplant incorporated, PPBC = pre-plant broadcast

Typical Usage of Our products

Celery

Typical Agro Liquid Recommendations:

Transplant solution (per acre):

Pro-Germinator	1 gallon
Micro 500	1 gallon
Sure-K	1 gallon
Micro 500	0.5 gallon

Side-dressed (per acre):

High Nrg-N	20 gallons
Pro-germinator	18.7 gallons
Sure-K	20 gallons

Yield Goal: 27.5 Tons Per Acre

Soil Test Values:

pH=7.6	K=111 ppm	Fe= 70 ppm
CEC=22.6	S=11 ppm	Cu= 1.6 ppm
%OM=11	Zn=2.6 ppm	B=0.8 ppm
P1 = 15	Mn=2 ppm	

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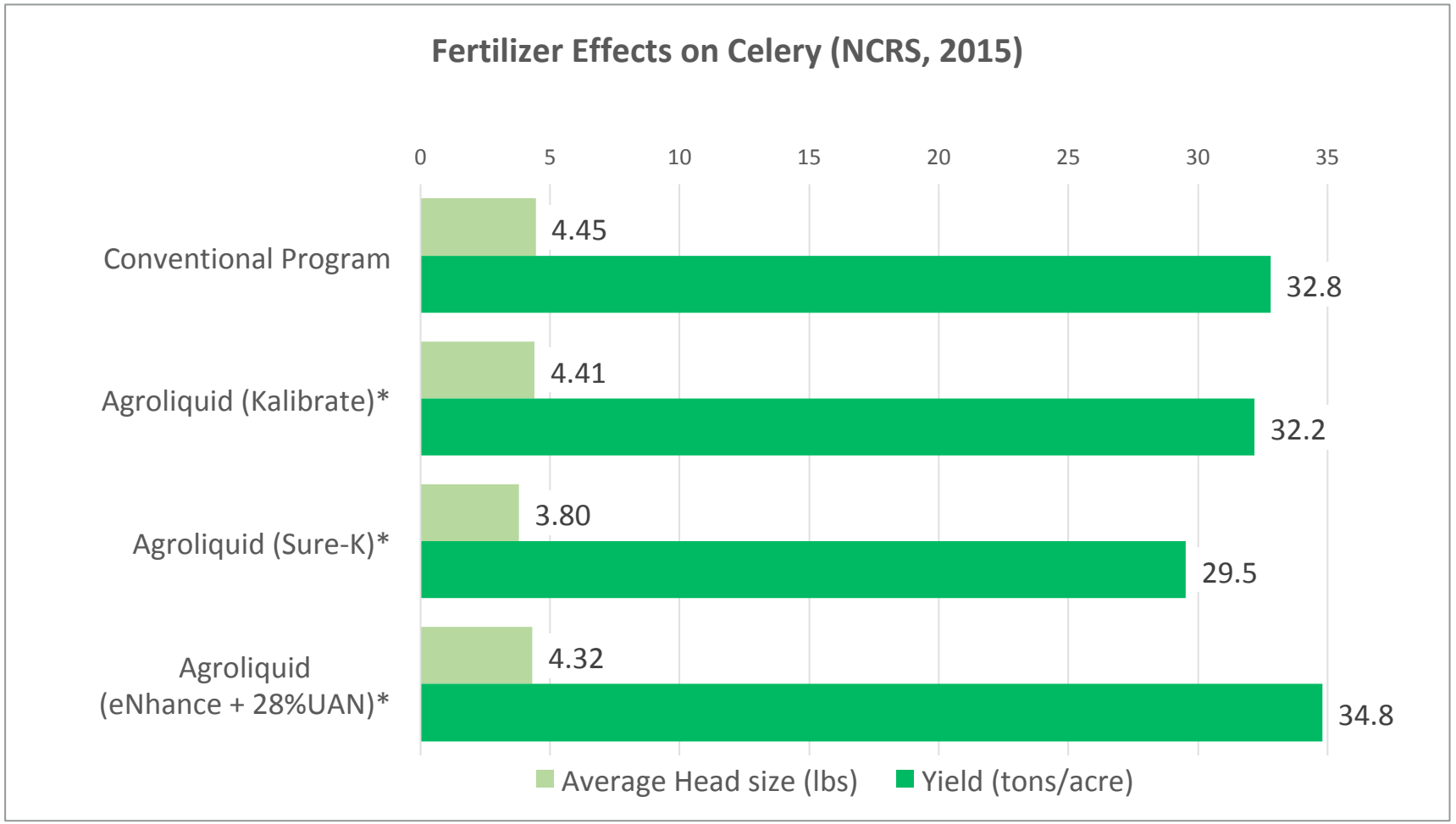
FERTILIZER PROGRAM FOR CELERY



Conventional Program: 695 lbs 0-0-60 + 200 lbs 18-46-0 + 5 lbs Micro-Blend (Broadcast/PPI)
AgroLiquid: 1 gal Pro-Germ. + 1 gal Sure-K + 1 gal Micro 500 (PRE bed); 20 gal High NRG-N or 24 gal 28% + eNhance + 20 gal Sure-K or Kalibrate + 18.7 gal Pro-Germ. (Sidedress); 13 gal 28% + eNhance 20 gal Sure-K or Kalibrate (Sidedress)

Cantaloupe

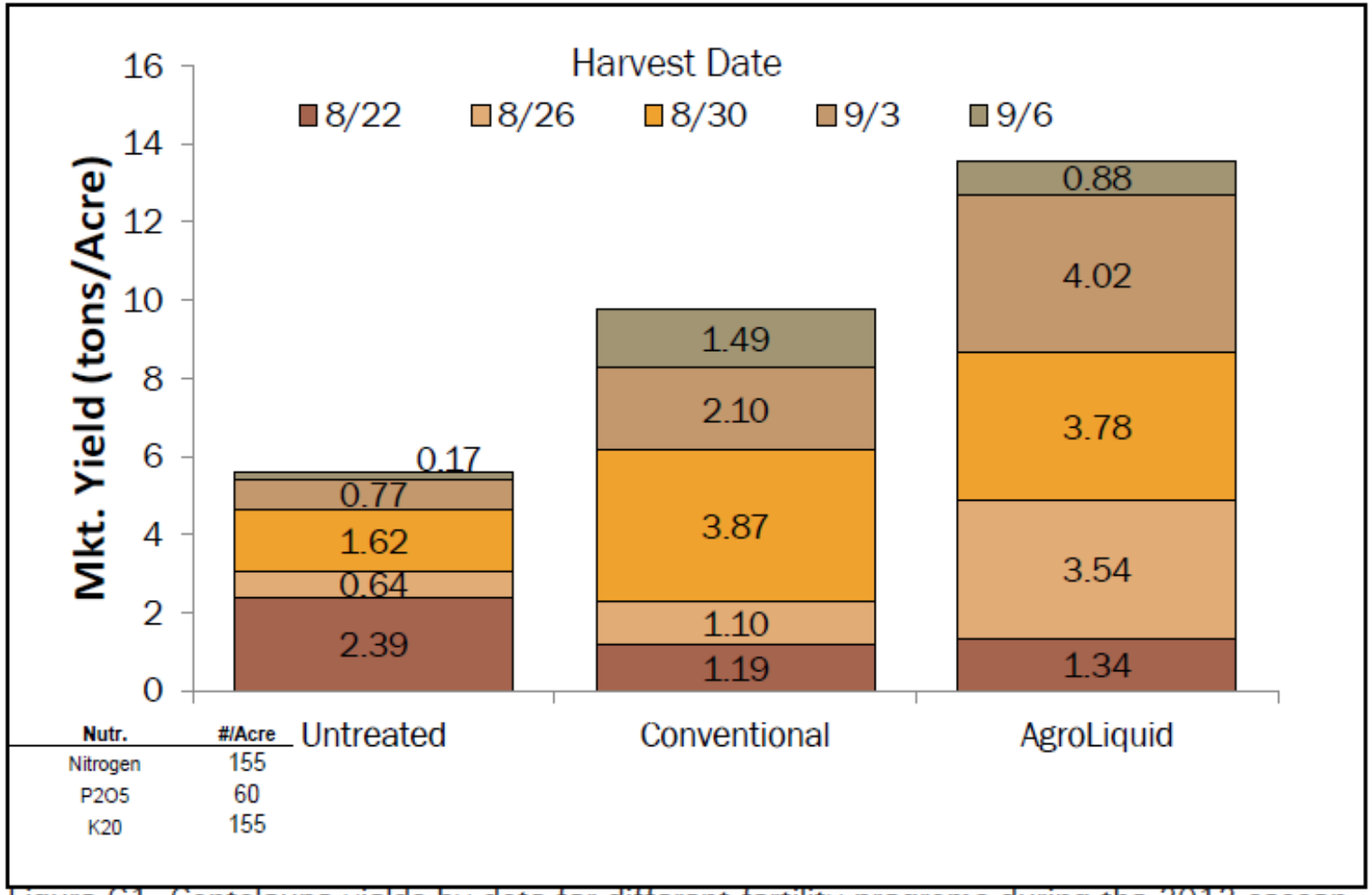


Figure C1. Cantaloupe yields by date for different fertility programs during the 2012 season.

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Pickling Cucumbers & Squash

Cucurbits

What do you need to know?

- Direct Seeded between April and July
- Multiple plantings to vary harvest times
- Most Farmers growing on Contract
- Harvest:
  - Cucumbers – June – September
  - Squash – August – November
- Both Hand Harvested, Cucumbers can be mechanically harvested

- Squash
  - Direct seeded
  - Fresh Market
- Cucumbers
  - Direct Seeded
  - Processing

Cucurbits

- Cucumbers
  - Yield Goal 15 Ton / Acre

Removal Recommendations	
Nutrient	lbs/A
N	135.0
P	45.0
K	225.0
S	24.0
Ca	120.0
Mg	30.0
Mn	0.0
B	0.0
Cu	0.0
Zn	0.0
Fe	0.0

Crop Micronutrient Response	
Mn	Med
B	Low
Cu	Med
Zn	None
Mo	None
Fe	None

- Winter Squash
  - Yield Goal 18 Ton / Acre

Removal Recommendations	
Nutrient	lbs/A
N	153.0
P	39.6
K	216.0
S	0.0
Ca	0.0
Mg	0.0
Mn	0.0
B	0.0
Cu	0.0
Zn	0.0
Fe	0.0

Crop Micronutrient Response	
Mn	Med
B	None
Cu	None
Zn	Low
Mo	None
Fe	None

Cucurbits
Location: Ontario

Removal Recommendations	
Nutrient	lbs/A
N	135.0
P	45.0
K	225.0
S	24.0
Ca	120.0
Mg	30.0
Mn	0.0
B	0.0
Cu	0.0
Zn	0.0
Fe	0.0

Cucumber 15 Ton/acre

Removal Recommendations	
Nutrient	lbs/A
N	153.0
P	39.6
K	216.0
S	0.0
Ca	0.0
Mg	0.0
Mn	0.0
B	0.0
Cu	0.0
Zn	0.0
Fe	0.0

Winter Squash 18 Ton/acre

- Planter Mix (Concentrated band near row)
  - 2.6 Gallons High NRG-N
  - 3 Gallons Pro-Germinator
  - 9 Gallons Sure-K
  - 1.5 Quart Micro 500
- Side Dress Mix
  - 17.5 Gallons High NRG-N
  - 1 Gallon Sure-K
  - 0.5 Gallons LiberateCa
  - 1 Gallon accesS
- Foliar
  - 5 Gallons fertiRain

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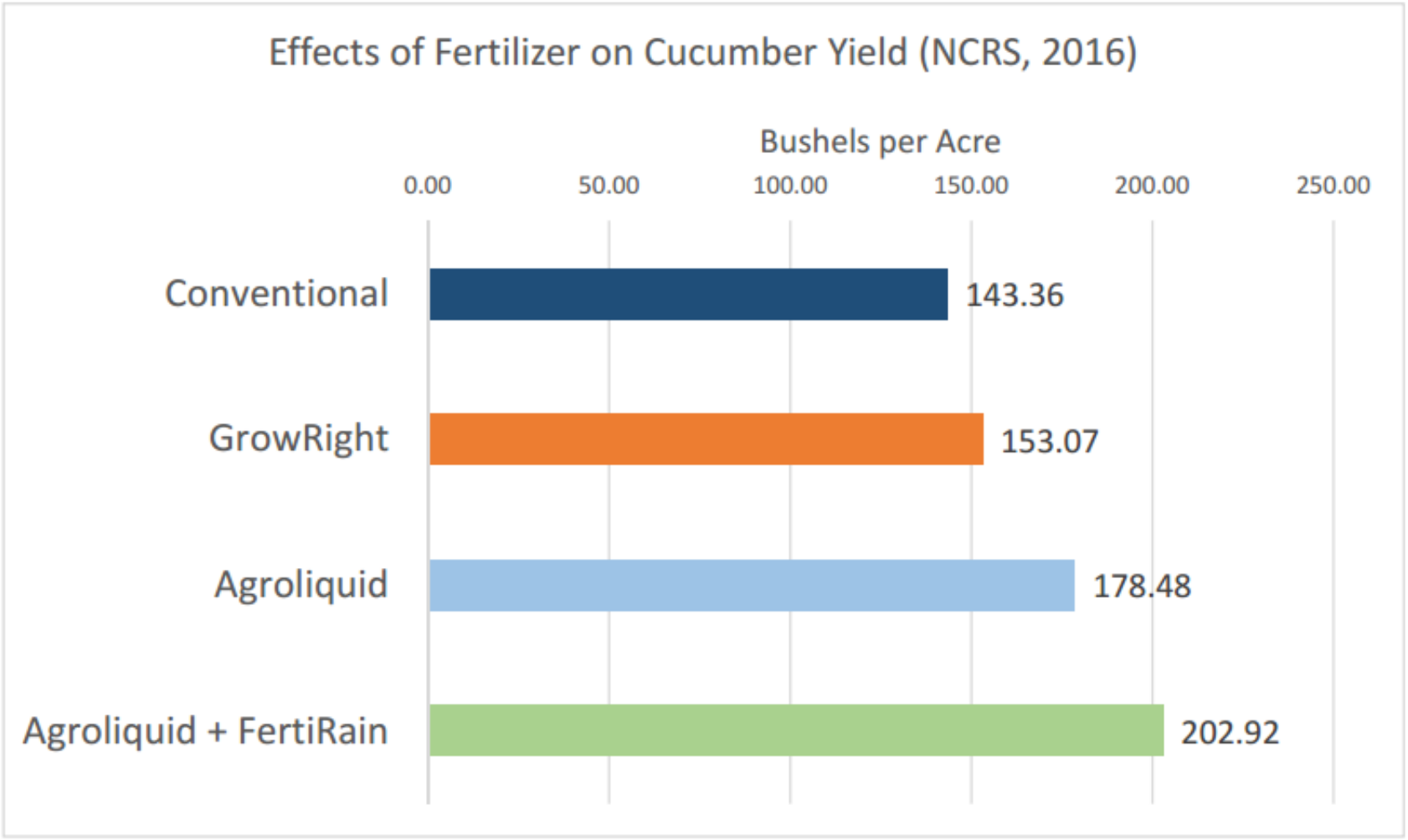

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Typical Usage of Our products

Grapes

Typical Agro Liquid Recommendations:

Spring application (per acre):

High NRG-N	11 gallons
Pro-Germinator	4.2 gallons
Sure-K	4.2 gallons
Micro 500	1 gallon
MicroLink Manganese	0.125 gallons
MicroLink Boron	0.125 gallons

Foliar Application (per acre):

	*Applied Month (3X)
Fase2	0.5 gallons

Yield Goal: 7.0 Tons per acre

Soil Test Values: Farm 1

pH=7.3	K=124 ppm	Fe= 34 ppm
CEC=8.6	S=2 ppm	Cu= 1.7 ppm
%OM=1.3	Zn=13 ppm	B=0.8 ppm
P1 = 211	Mn=5 ppm	

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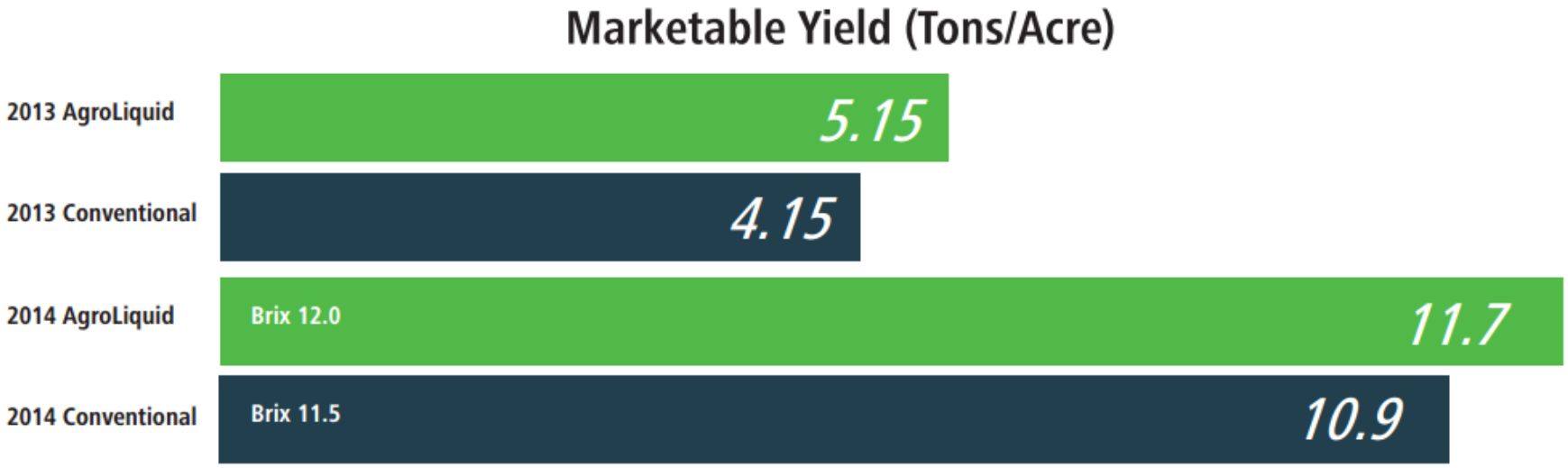
Grape Trials

The research vineyard is used to compare conventional fertility programs versus AgroLiquid only program and the impacts each have on the development and yield in young Concord grape vines in Central Michigan.



	Treatment	Rates	Total Nutrients	NUE	Yield
2013	Conventional	12,12.9, 100#	155.8	53.2	4.15
	AgroLiquid	11, 4.2,4.2,1, 0.125	97.1	106.1	5.15
2014	Conventional	17,13, 130#	182.3	119.1	10.86
	AgroLiquid	14, 5,6.5,1, 0.125	65.9	354.3	11.68

AgroLiquid products have a higher Nutrient Use Efficiency (NUE) meaning the plants are using nutrients more efficiently and producing a better yields.

AgroLiquid program High NRG-N, Pro-Germinator, Sure-K, Micro500, Manganese.
Conventional Program 28% UAN, 10-34-0, SOP
Application method was broadcast.

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Typical Usage of Our products

Hops

Typical Agro Liquid Recommendations:

Banded next to plants in spring (per acre):

High NRG-N	15 gallons
Pro-Germinator	4 gallons
Kalibrate	2 gallons
Micro 500	1.0 gallon
Liberate Ca	2 gallons

Foliar Application (per acre):

Fase2 2 quarts

(applied after 2-3 feet of vertical growth)

Banded next to plants in 4 weeks after spring application (per acre):

N-Response	5 gallons
Kalibrate	2 gallons

Foliar Application (per acre):

Fase2 2 quarts

(applied after 6-8 feet of vertical growth

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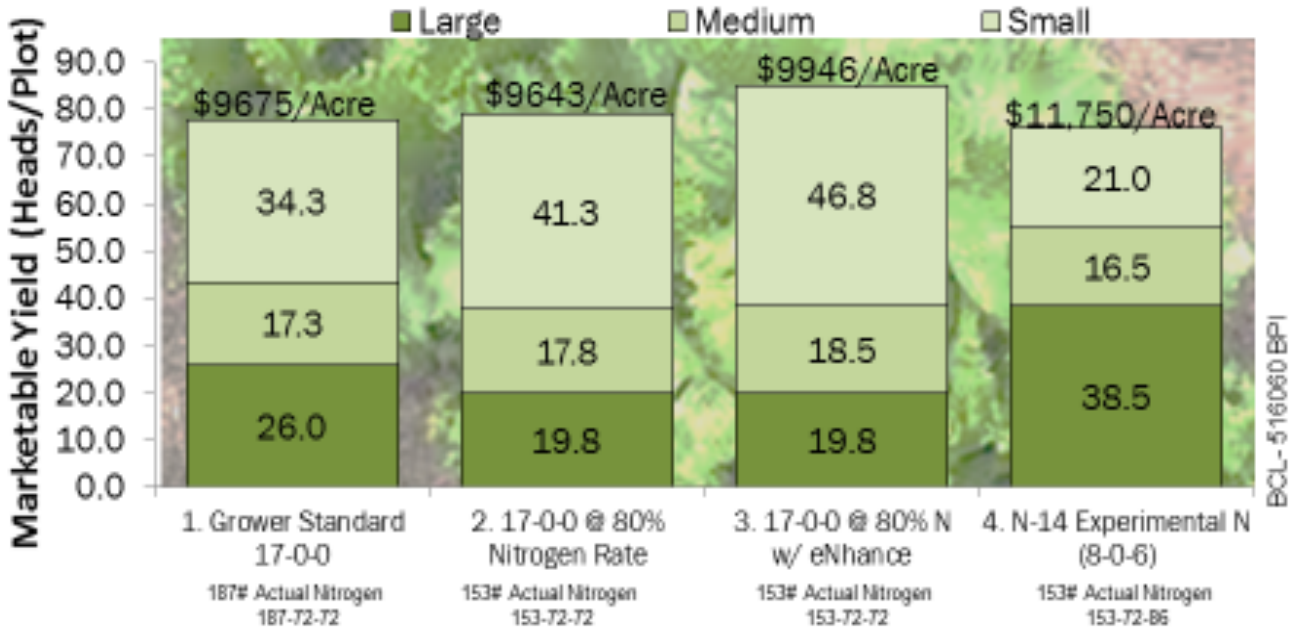
Head Lettuce – AgroLiquid™ has lower Nitrogen options

Recent research work in Guadeloupe, CA has shown lower nitrogen rates can actually enhance yields of head lettuce. Reducing the rate of CAN- 17 (0-0-17) by 20% increased the marketable head count slightly (Trt #1 vs. #2), but this lowered the overall value as more small heads were produced. Still, when the same 80% nitrogen rate was applied with AgroLiquid's "eNhance," (Trt #3) the crop yield and value were increased. The most interesting response was observed with AgroLiquid's experimental nitrogen product, N-14 (Trt #4) A dramatic shift toward large sized heads increased the crop value without producing more heads per acre. See the 2014 AgroLiquid research report for more complete details on this trial.



Research Supports Future Growth www.agroliquid.com/Research

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Pasco, WA 2014

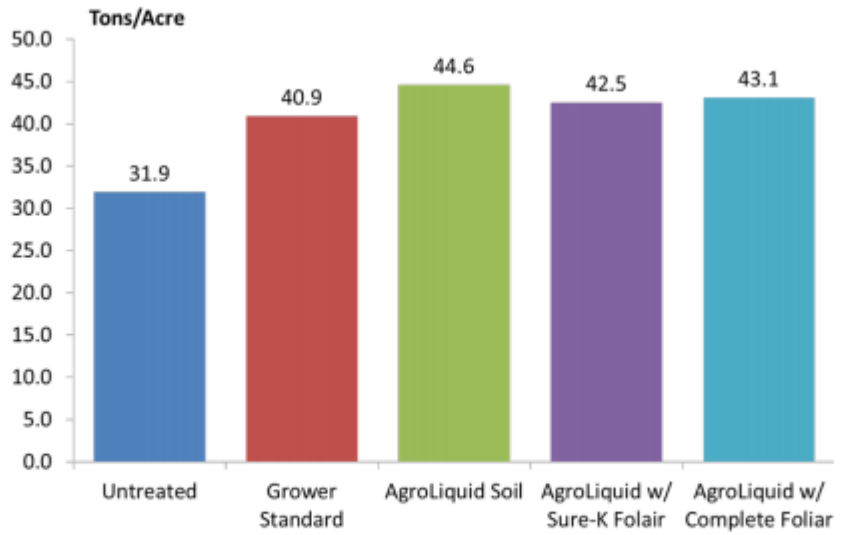
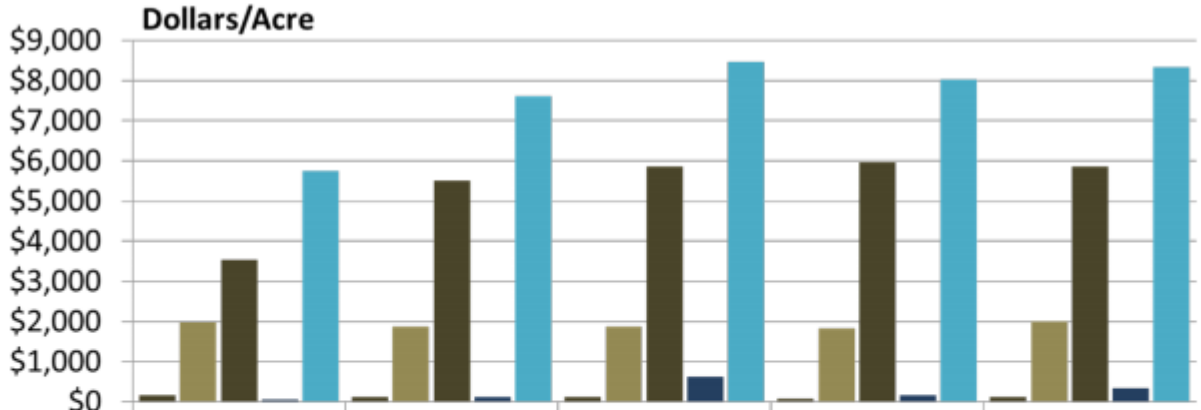


Figure O1. Effect of three fertility programs on the total yield of yellow storage onions, 2014.

Figure O2. Effect of three fertility programs on graded values of yellow storage onions, 2014.



	Untreated	Grower Standard	AgroLiquid Soil	AgroLiquid w/ Sure-K Folair	AgroLiquid w/ complete Foliar
Boilers	$172.80	$127.20	$120.00	$75.60	$127.20
Medium	$1,990.40	$1,860.80	$1,870.40	$1,820.80	$2,009.60
Jumbo	$3,526.40	$5,512.00	$5,850.00	$5,962.00	$5,862.00
Colossal	$60.00	$120.00	$631.20	$163.20	$343.20
Total $	$5,749.60	$7,620.00	$8,471.60	$8,021.60	$8,342.00

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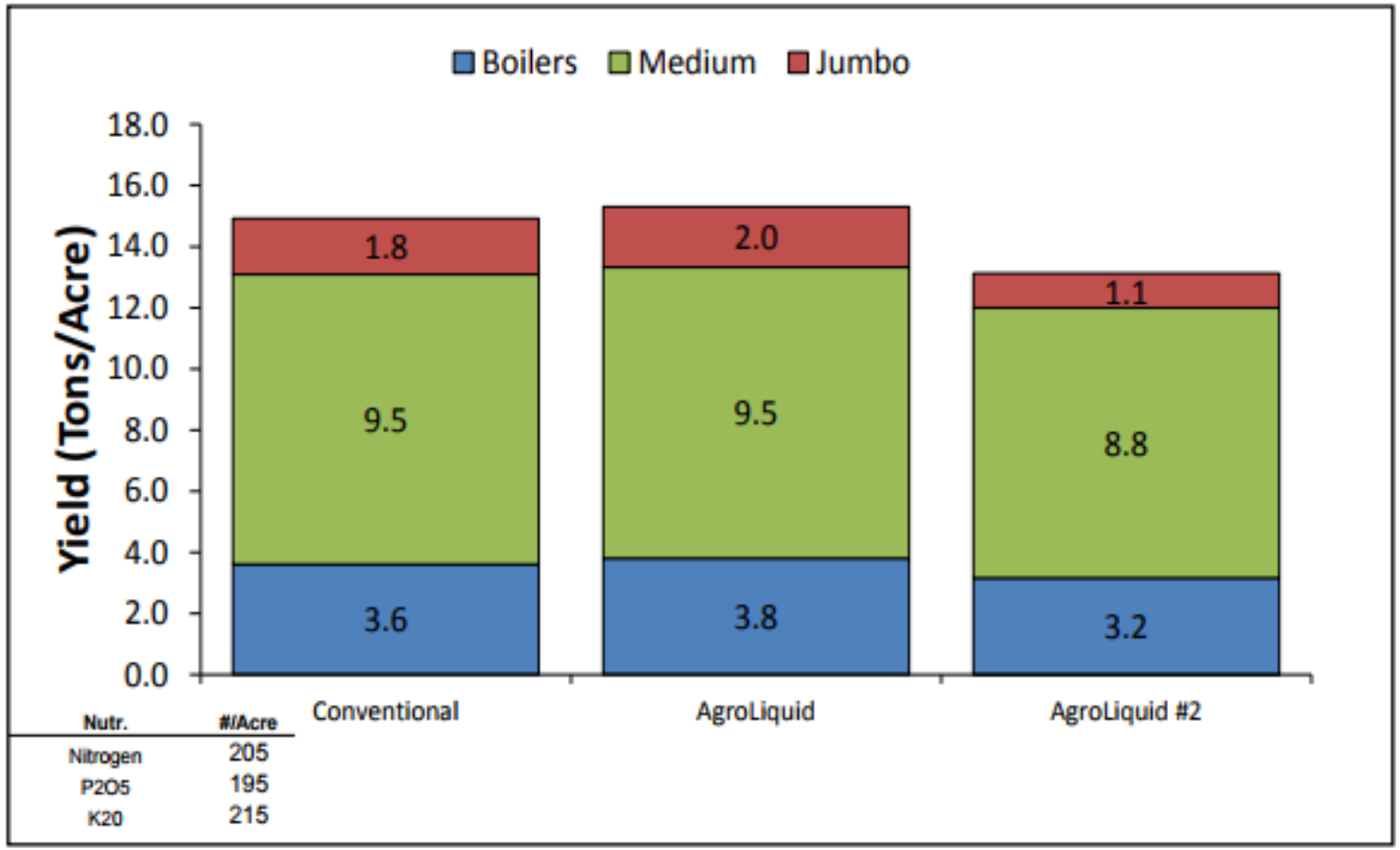
NCRS, 2013

	Treatment	Rate/A (gal or lb/A)	"Method of Application"	Total Nutrients #\	NUE**	Yield Ton/A
1	0-0-60 + Micro Blend 10-34-0 28% UAN +10-34-0 Conventional	360# + 5# 12 (25 + 18.6) x 2	PPI Surface Band Side dress	617	49.3	14.9
2	PG + SK + Micro 500 HN+SK+PG HN + SK AgroLiquid	10, 2.5, 1 21+10+10 21 + 10	Surface Band Side dress Side dress	220	138.9	15.3
3	PG+M-500 HN+SK+PG AgroLiquid #2	5+1 (21+11.5+7.5)x2	Surface Band Side dress	220	119.2	13.1

*Micronutrients not included in total fertilizer per acre calculations. **NUE = Nutrient Use Efficiency =Lbs Yield / Total Lb. N,P,K&S as Fertilizer Applied, HN=High NRG-N, PG= Pro-Germinator, SK= Sure-K, PPI = preplant incorporated



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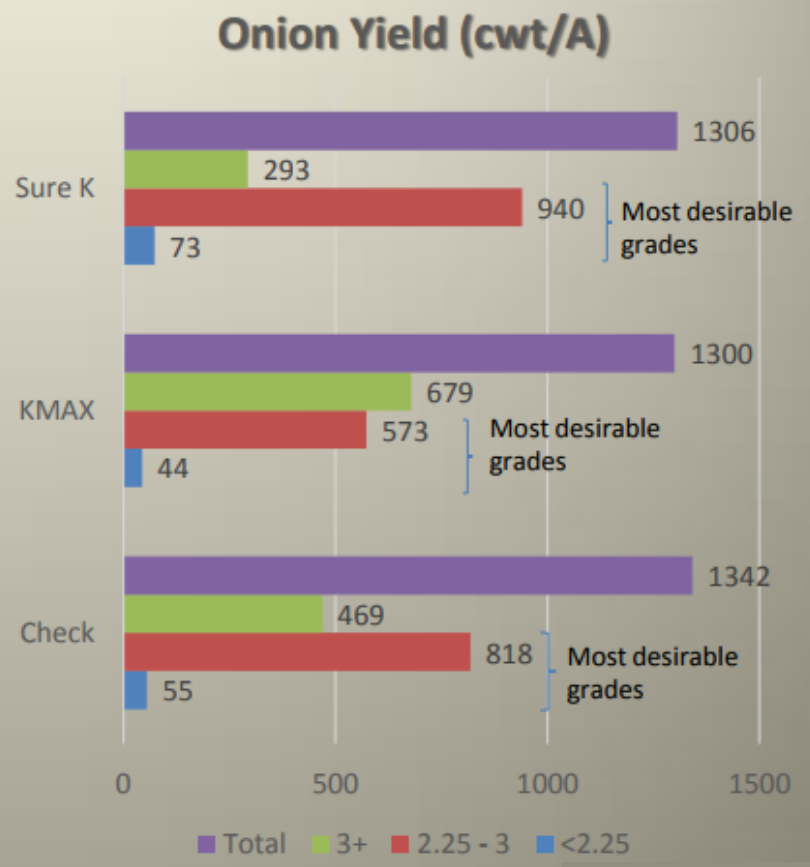
Onion, Annapolis Valley, NS, 2014

Cooperator: Cavendish Agri

Onion Field Trial



Treatment Description

Check = No foliar fertilizer

KMAX Nutriag foliar 1 qt/A

Sure K foliar 1 pt/A

Four foliar applications made at 2 week intervals starting 8/1/14

P1 = 165 ppm, K = 80 ppm, S = 7.5 ppm
CEC = 11.5, pH = 6.8, OM = 2.3%

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Peppers

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Peppers

What do you need to know?

- Most large acre growers have contracts that determine acres
- Plants started in greenhouse around March
- Planted as transplants ‘plugs’ end of May, running into June
- Majority Hand Harvested
  - August – November
  - First freeze / contract 100%

Bell Peppers vs. Others

- **Most** Bell Peppers are grown:
  - On plastic
  - Twin rows
  - Drip
- Others:
  - Bare ground
  - Individual rows
  - Over head irrigation

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Peppers

Removal Recommendations	
Nutrient	lbs/A
N	133.3
P	40.0
K	226.7
S	28.0
Ca	44.0
Mg	23.3
Mn	0.0
B	1.5
Cu	0.0
Zn	0.0
Fe	0.0

- Yield Goal: 20 Ton / Acre

Crop Micronutrient Response	
Mn	Low
B	None
Cu	None
Zn	None
Mo	None
Fe	None

Peppers – Drip
Location: Ontario

Removal Recommendations	
Nutrient	lbs/A
N	133.3
P	40.0
K	226.7
S	28.0
Ca	44.0
Mg	23.3
Mn	0.0
B	1.5
Cu	0.0
Zn	0.0
Fe	0.0

- Yield Goal: 20 Ton / Acre

- Planter Water Starter (2% solution)
  - 1 Gallon Pro-Germinator
  - 1 Quart Micro 500
- Drip Program
  - 10 Gallons High NRG-N
  - 6.5 Gallons NResponse
  - 10 Gallons Sure-K
    - 2.625 Gallons/Acre/Week
- Foliar Program
  - 5 Gallons fertiRain
    - 2 apps x 2.5 Gallons

- Supplemented with a dry program that was applied during bedding under the plastic

Peppers – Bare Ground
Location: Ontario

Removal Recommendations	
Nutrient	lbs/A
N	133.3
P	40.0
K	226.7
S	28.0
Ca	44.0
Mg	23.3
Mn	0.0
B	1.5
Cu	0.0
Zn	0.0
Fe	0.0

- Yield Goal: 20 Ton / Acre

- Planter Starter (Concentrated band near row)
  - 9 Gallons High NRG-N
  - 3 Gallons Pro-Germinator
  - 10 Gallons Sure-K
  - 1.47 Gallons accesS
  - 3 Quarts Gallons LiberateCa
  - 2 Quarts Micro 500
  - 1 Quart Boron
- Side Dress Mix
  - 20 Gallons NResponse
  - 10 Gallons Sure-K
- Foliar
  - 5 Gallons fertiRain

Red Bell Pepper: Coachella CA
Objective: To reduce incidence of Stip disorder in red bell peppers using a blend of Kalibrate and S-Calate fertilizer from AgroLiquid against a grower standard KTS program. STIP is a physiological disorder in peppers believed to be brought on by a calcium imbalance.

- An AgroLiquid program
- Applied a total of 7 gal/A of Kalibrate (2-0-10-6S) + 5 gal./ac S-Calate (7-0-0-14S-1Ca) in six equal drip irrigation applications.

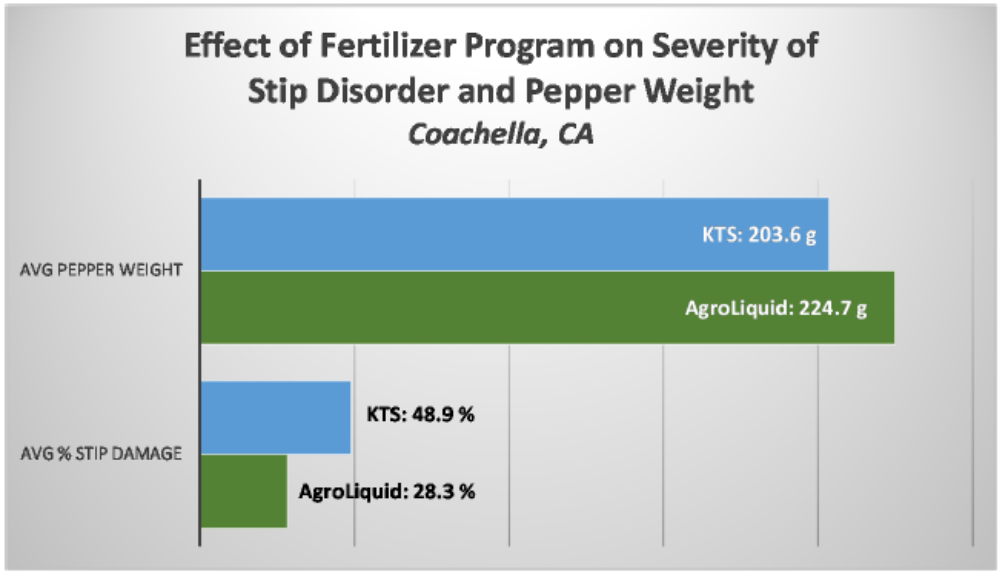
- The grower standard
- Applied 21 gal/Ac of KTS (potassium thio-sulfate. 0-0-25-17S) also applied in 6 equal drip irrigation applications.

Conclusions:

- Use of Kalibrate + S-Calate resulted in over a 10% increase in pepper weight at harvest compared to the KTS-treated peppers.

The AgroLiquid drip-applied program of Kalibrate + S-Calate resulted in a substantial reduction in Stip disorder compared to the KTS-treated peppers.

- S-Calate contains 1% calcium which may have been a factor in the reduction of Stip damage, as calcium imbalance is thought to be a contributing factor of Stip.



Pro-Germinator treatment:

- 7.5 gal/Ac @ $70.88/Ac
  - 86.25 lbs of Phosphorus based on efficiency (20 lbs actual Phosphorus)

10-34-0 treatment:

- 17.05 gal/Ac @ $68.20/Ac
  - 68 lbs of actual Phosphorus

Negating the efficiency value of Pro-Germinator, the Pro-Germinator treatment received 48 lbs less Phosphorus than the 10-34-0 treatment

Summary:

Total Fertigation Cost per Acre:

Pro-Germinator: $291.39

10-34-0: $286.11

Difference: $5.28/Ac

Note: the Pro-Germinator cost an additional $2.68/Ac over the 10-34-0 and that side of the treatment also received an additional gallon of 12-0-0-26 @ $2.60/Ac, giving us the additional $5.28/Ac cost of treatment

Potato Starter Program: Cost per Acre previous slide was slightly more

HOWEVER:

Return per acre Pro-Germ actual was $287 over return per acre 10-34-0

Grower estimate: 1,500 ft to fill Pro-Germ & 1,800 ft to fill 10-34-0

Totals:	Average Yield (sacks/Ac)		Difference	Gross increase over
	10-34-0	Pro-Germ	(sacks/Ac)	10-34-0 at $7/cwt
Actual:	514	555	+ 41	$ 287.00 /Ac
Grower:	474	569	+ 95	$ 665.00 /Ac

Typical Usage of Our products

Pumpkins

Typical Agro Liquid Recommendations:

<u>PRE (per acre):</u>	
High NRG-N	18 gallons
<u>Planting (per acre):</u>	
High NRG-N	6 gallons
Pro-Germinator	3 gallons
Sure-K/Kalibrate	4 gallons
Micro 500	0.25 gallons
Boron	0.125 gallon
<u>Foliar x 4 (per acre):</u>	
ferti-Rain	1.5 gallons
LiberateCA	0.5 gallon
Boron*	0.125 gallon

*2nd and 3rd application

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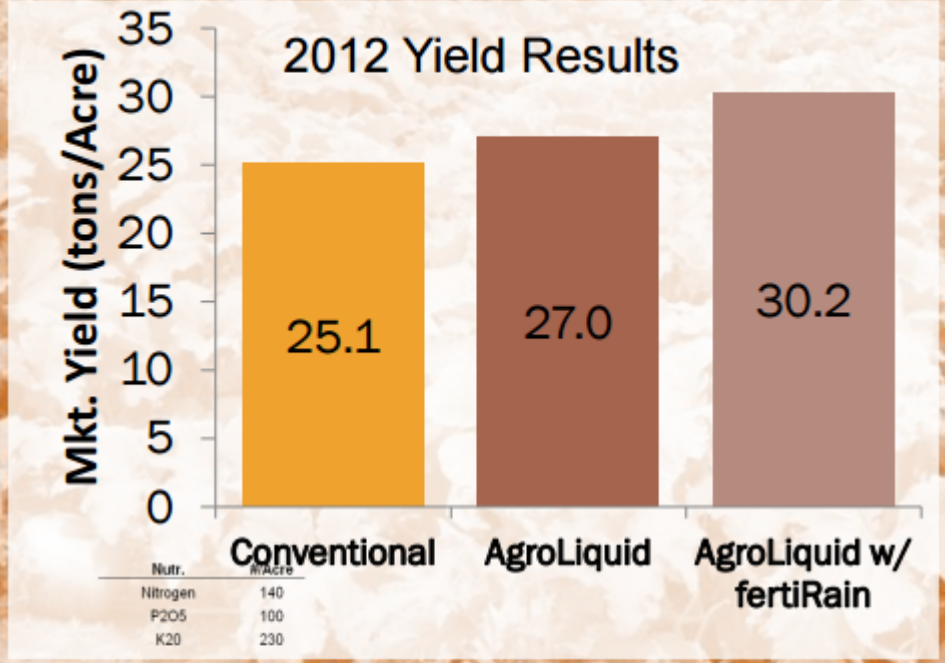
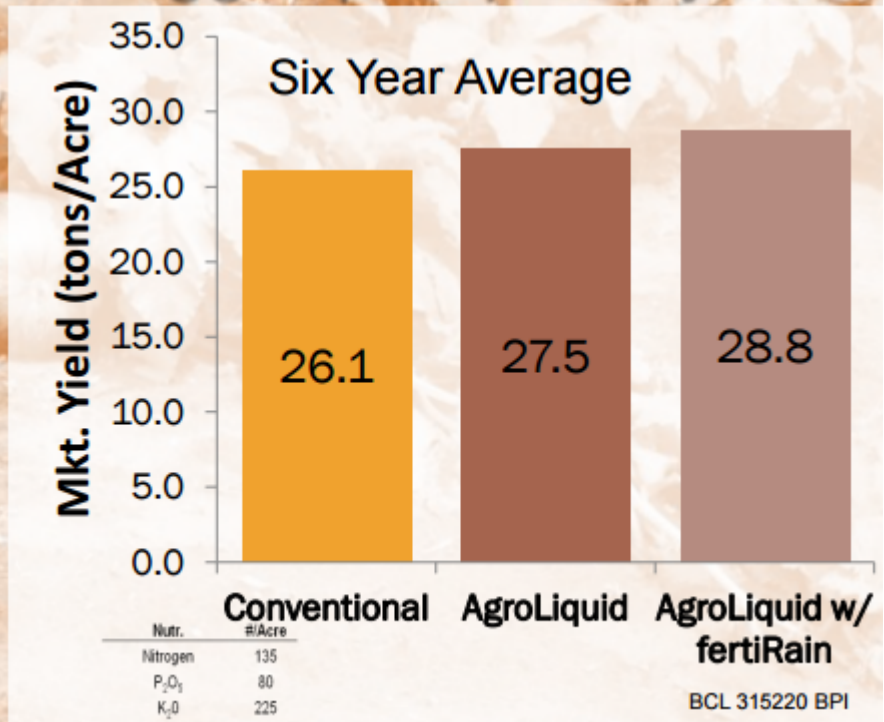
Better Yields with Similar Sized Pumpkins

AgroLiquid Products carve out bigger pumpkins yields



Pumpkins Yield Better with Liquid™

Over the last six years, the average pumpkin yields from AgroLiquid based fertility programs have been 1.4 tons per acre above the conventional fertility program. Adding fertiRain foliar applications to the AgroLiquid program increased the AgroLiquid average by 1.3 tons or a 2.7 tons per acre above the conventional fertility program.



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Typical Usage of Our products

Sweet Corn

Typical Agro Liquid Recommendations:

<u>Planter applied 2 X 2 (per acre):</u>

High NRG-N	16 gallons
Pro-Germinator	4 gallons
Sure-K	8.5 gallons
Micro 500	0.75 gallons
MicroLink Manganese	0.125 gallons

<u>Side-dressed (per acre):</u>

eNhance28%UAN	30 gallons

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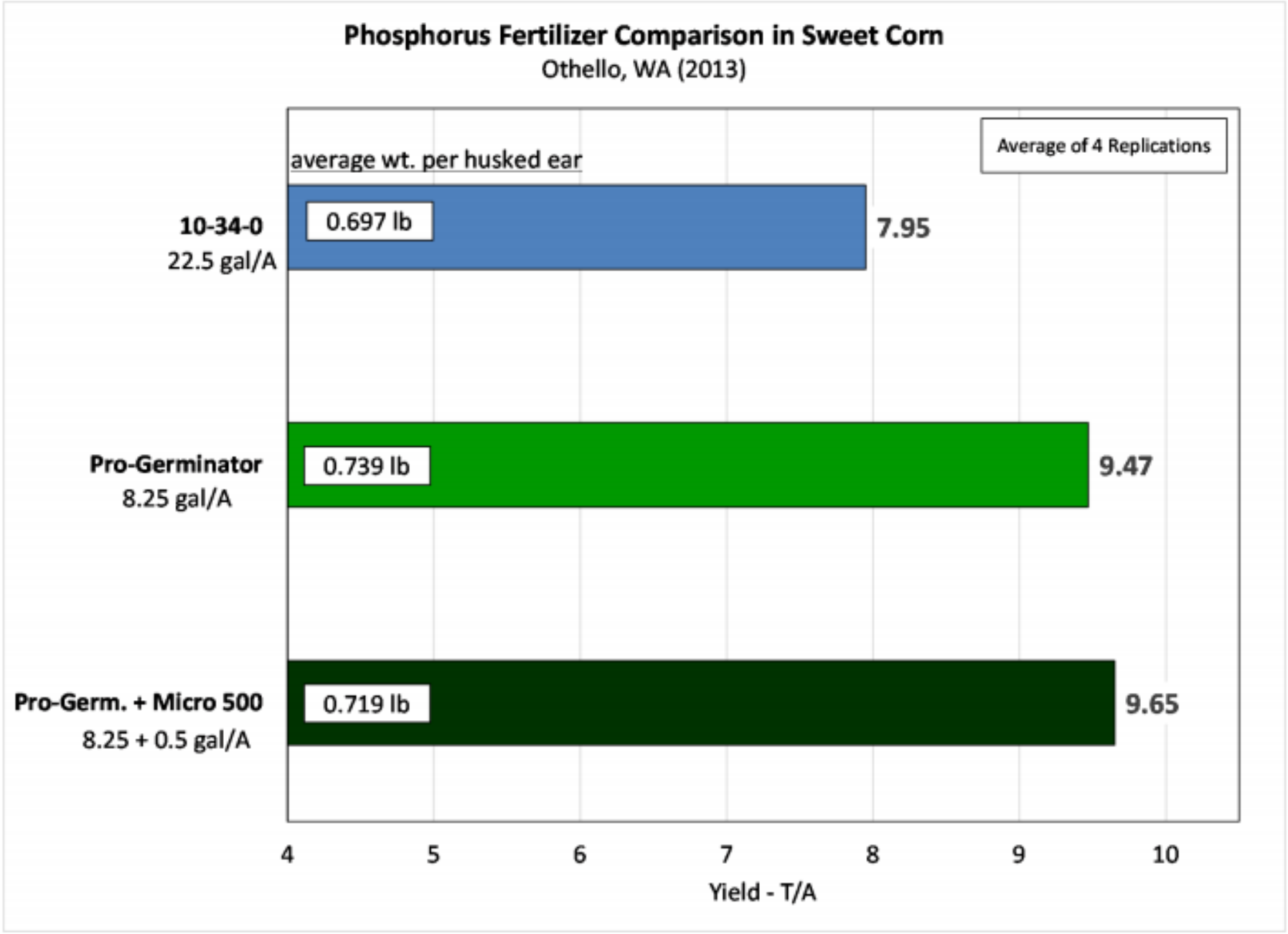

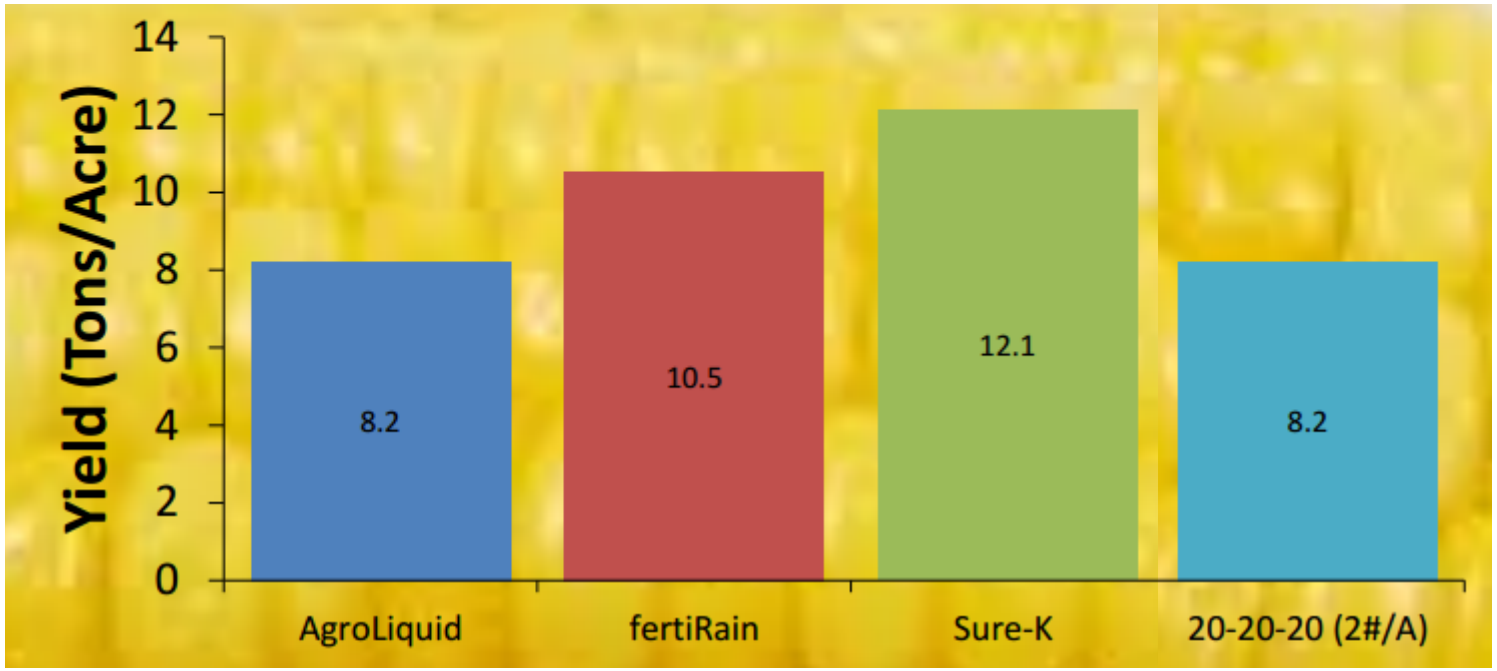

- Foliar fertilizer applications (2 quarts /Acre) during early sweet corn development (V5 to V6) can enhance marketable sweet corn yields. This early timing is when the corn plant is determining row number on the cob.
- Not all foliars are the same, conventional 20-20-20 foliar added nothing to crop yields

Planter applied 2x2, High-NRG-N@16, Pro-Germinator@4, Sure-K @8.5, Micro 500@ 2qt. and Side-dress eNhance and 28% UAN @30 GPA

Typical Usage of Our products

Squash

Typical Agro Liquid Recommendations:

PRE (per acre):

High NRG-N	18 gallons

Planting (per acre):

High NRG-N	6 gallons
Pro-Germinator	3 gallons
Sure-K/Kalibrate	4 gallons
Micro 500	0.25 gallons
Boron	0.125 gallon

Foliar x 4 (per acre):

ferti-Rain	1.5 gallons
LiberateCA	0.5 gallon
Boron*	0.125 gallon

*2nd and 3rd application

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Typical Usage of Our products

Tomatoes

Typical Agro Liquid Recommendations:

Transplant solution (per acre):

Pro-Germinator	1 gallon
Sure-K	1 gallon
Micro 500	1 gallon

Side-dressed (per acre):

High NRG-N	28 gallons
Pro-germinator	5 gallons
Sure-K	20 gallons
Micro 500	0.5 gallons
MicroLink Manganese	0.125 gallons
MicroLink Boron	0.125 Gallons

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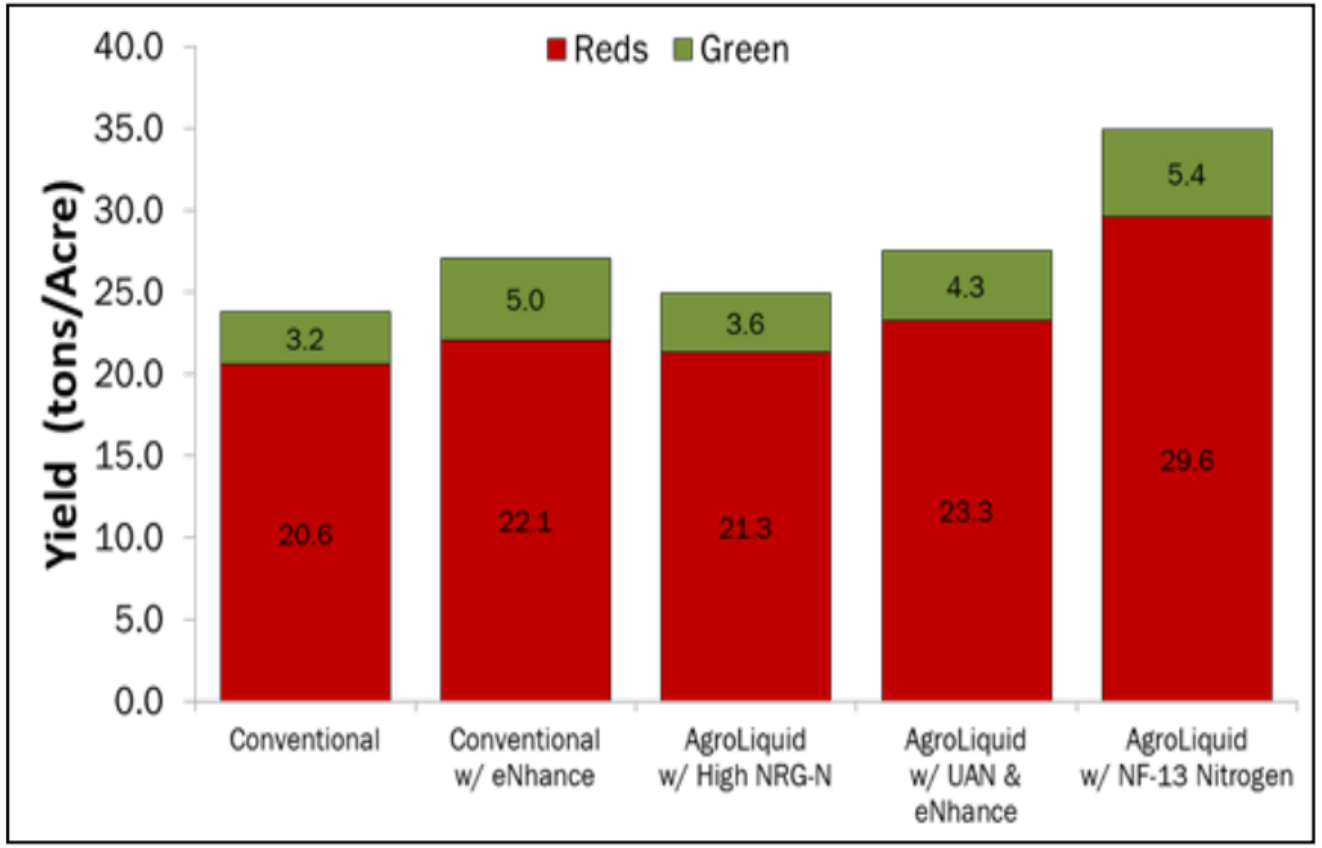

Figure RT1. Yield or red and green Heinz 1015 Roma tomatoes in response to various nitrogen fertility programs, Escalon, CA 2013

Tomato

Removal Recommendations	
Nutrient	lbs/A
N	200.0
P	60.0
K	340.0
S	42.0
Ca	66.0
Mg	35.0
Mn	0.0
B	0.0
Cu	0.0
Zn	0.0
Fe	0.0

30 Ton/acre yield goal

Crop Micronutrient Response	
Mn	Med
B	Med
Cu	Med
Zn	Med
Mo	Med
Fe	High

Tomato – Processing
Location: Pennsylvania

- Transplant solution (amt/100 gal)
  - 1.25 gal PrimAgro P or Pro-Germinator
  - 0.5 gal Sure-K
  - 0.25 gal Micro 500

- 1st Side Dress (gal/acre)
  - 17 gal 30%UAN + eNhance
  - 6.75 gal Sure-K
  - 0.125 gal Micro 500
  - 0.125 gal Boron
  - 1 gal LiberateCa
  - 0.25 gal C-Tech
  - 0.25 gal Magnesium

  25 gal/acre total

  Supplemented with dry fertilizer applied prior to planting

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Tomato – Processing (Continued)
Location: Pennsylvania

- 2nd Side Dress (gal/acre)
  - 7 gal 30%UAN + eNhance
  - 9.375 gal Sure-K
  - 0.25 gal Micro 500
  - 0.125 gal Boron
  - 1 gal LiberateCa
  - 0.25 gal C-Tech
  - 0.25 gal Magnesium

    18.25 gal/acre total

    Foliar applications of Sure-K, fertiRain, and/or LiberateCa as indicated by tissue tests

Watermelon

Watermelon

What do you need to know?

- Plants started in a Greenhouse in March
- ‘Beds’ are laid April into May
  - All watermelon grown on plastic with drip
- Transplanted with a water wheel May into June
- Hand Harvested July - October
- Bee’s are the most important part
  - As with Peppers and Cucumbers Bees are imported to the farms for increased pollination activity
- 7 – 10 day spray program
  - As with all vegetable / annual fruit crops

Watermelon

Removal Recommendations	
Nutrient	lbs/A
N	170.0
P	57.5
K	287.5
S	27.5
Ca	87.5
Mg	30.0
Mn	0.0
B	0.0
Cu	0.0
Zn	0.0
Fe	0.0

Crop Micronutrient Response	
Mn	Low
B	Low
Cu	None
Zn	Low
Mo	None
Fe	None

- Yield Goal : 25 Ton / Acre

Watermelon Location: Ontario

Removal Recommendations	
Nutrient	lbs/A
N	170.0
P	57.5
K	287.5
S	27.5
Ca	87.5
Mg	30.0
Mn	0.0
B	0.0
Cu	0.0
Zn	0.0
Fe	0.0

25 Ton/acre yield goal

- Planter Mix / First Drench
  - 2 Gallons Pro-Germinator
  - 0.5 Gallons Micro 500
- Drip Program
  - 10 Gallons High NRG-N
  - 10 Gallons NResponse
  - 10.5 Gallons Sure-K
  - 1 Gallon LiberateCa
  - 2 Quarts eNhance
  - 1 Quarts Boron
    - 2.75 Gallons / Acre / Week
- Foliar
  - 6 Gallons fertiRain
  - 3 Gallons LiberateCa
    - 3 Applications of 3 Gallons

▶ Supplemented with a dry program put down under beds.

Typical Usage of Our products

Giant Watermelon

Typical Agro Liquid Recommendations:

Applied at the time of planting(per acre):

High NRG-N	8 gallons
N-Response	8 gallons
Pro-Germinator	6 gallons
Sure-K	8.5 gallons
Micro 500	1 gallons
MicroLink Manganese	0.5 gallons
MicroLink Boron	0.125 gallons

Side-dressed (per acre):

*Applied twice

GrowRight	3 gallons

Weekly Foliar applications (per acre):

* Applied 8 times

Fase2	0.5 gallons
FertiRain	1 gallon

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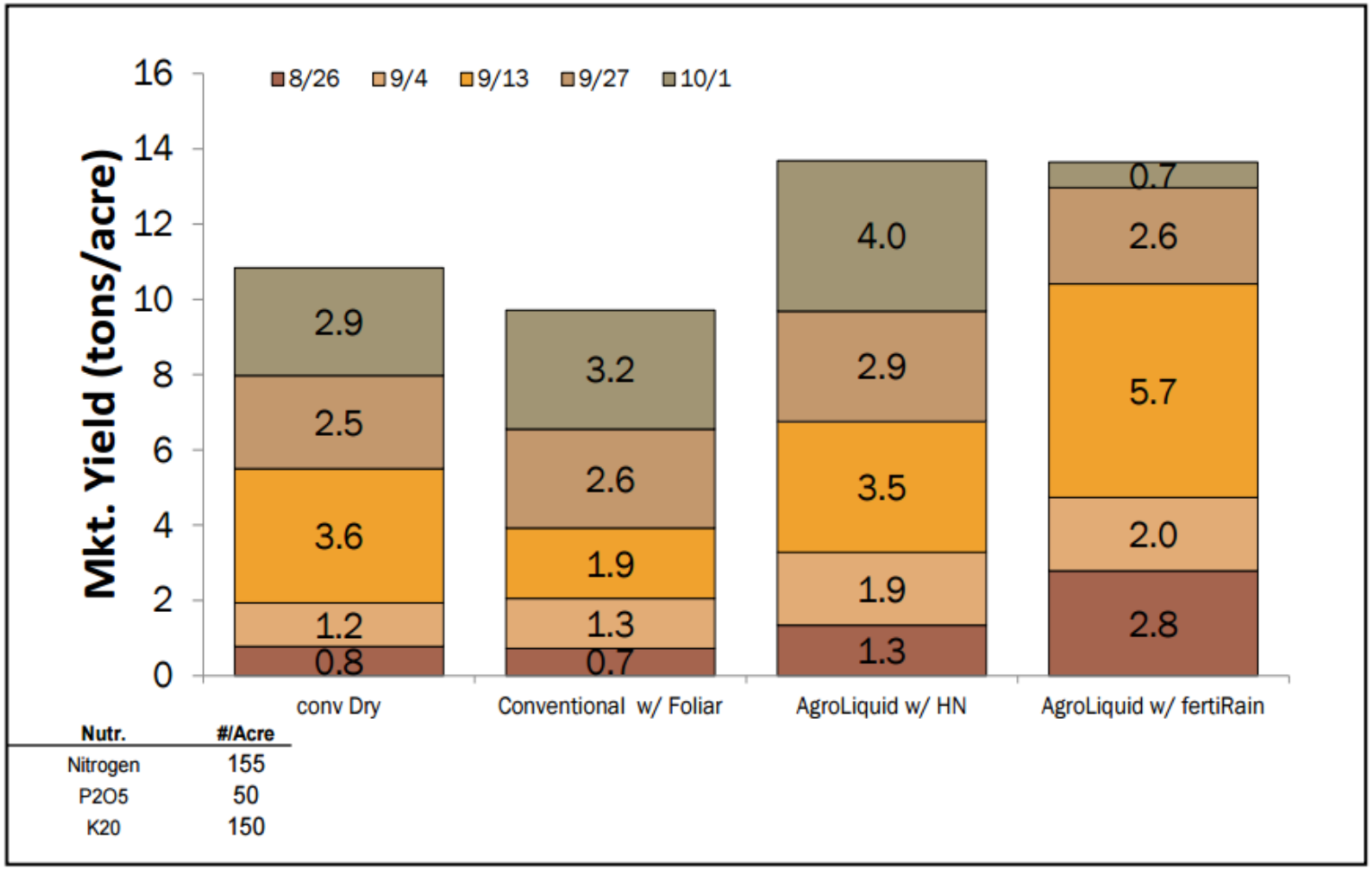
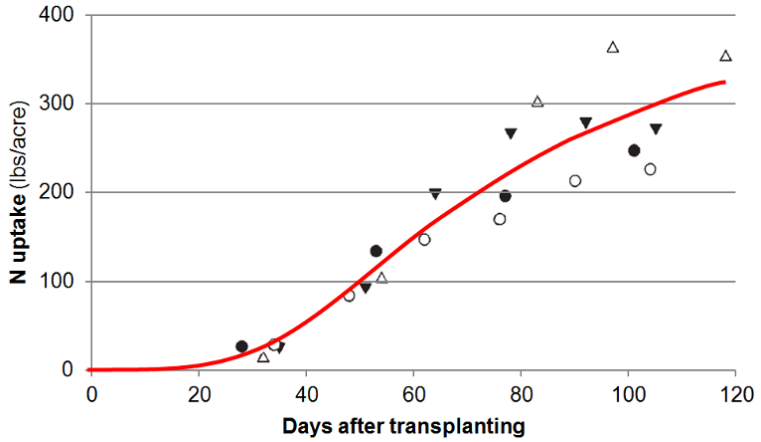


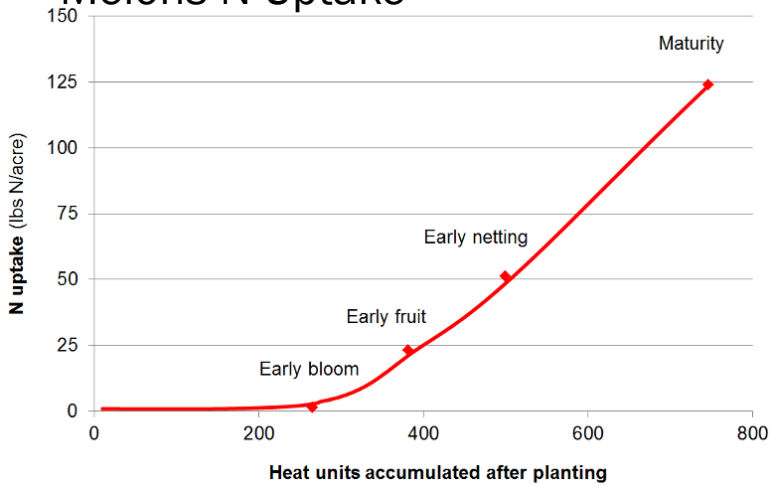
Figure W1. Watermelon yields by harvest date for different fertility programs and additive benefit of foliar fertilizer applications on the yields.

What can be Gained from Nitrogen Removal and Uptake Data.

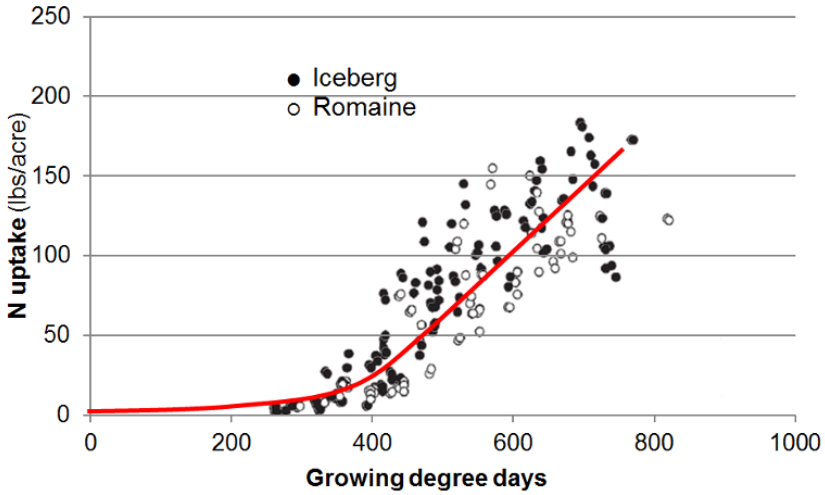
Tomato N Uptake



Melons N Uptake



Lettuce N Uptake



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How does Nitrogen Removal Data help us make Fertilizer Recommendations

N removal melons

Location	Years	Removal (lbs N/ton fresh weight)		Source
		Mean	Range	
Arizona	1990	3.88	2.41 - 4.91	[3]
Arizona	2003-2005	5.90	5.24 - 7.02	[7]
Spain	2010	3.08	1.97 - 4.47	[2]
Various		3.01		[6]
Weighted Average		**4.87**	**1.97 - 7.02**	

Prune and Plum N removal

Location	Years	Removal (lbs N/ton of dried fruits)		Source
		Mean	Range	
California		15.0	12 - 18	[3]
California	2014	11.6	8.9 - 13.8	[1]
California	1996	9.7	9 - 10.9	[4]
California	1993	13.3		[9]
Weighted Average		**11.2**	**8.9 - 18**	

Onion N removal

Location	Years	Removal (lbs N/ton fresh weight)		Source
		Mean	Range	
Lancaster, CA	2013-14	3.42	2.97 - 3.92	[2]
Salinas, CA	1961	5.41	4.83 - 6.29	[7]
India	2012	4.89	3.1 - 6.16	[5]
Various		3.60	1.6 - 4.8	[4]
Various		3.52	2.53 - 3.81	[6]
Weighted Average		**3.94**	**1.6 - 6.29**	

Broccoli N removal

Location	Years	Removal (lbs N/ton fresh weight)		Source
		Mean	Range	
Salinas, CA	2012-13	9.0	7.73 - 11.64	[6]
Arizona	2000	11.3	11.01 - 11.91	[8]
Canada	2001-02	12.5	11.58 - 14.5	[1,2]
Canada	1990-91	12.4	7.48 - 19.01	[9]
Spain	1996	10.5		[5]
Various		11.6		[4]
Weighted Average		**11.2**	**7.48 - 19.01**	

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Amount of N Removed by Crops is Variable by State and even Region

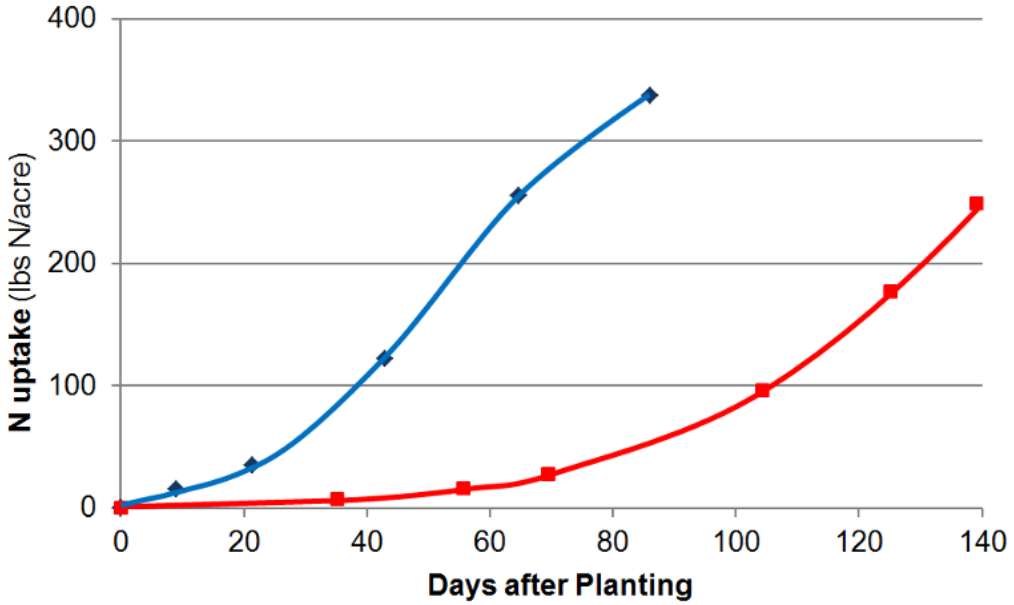
N Removal Shown Below in Potatoes for Multiple States.

Location	Years	Removal (lbs N/ton fresh weight)		Source
		Mean	Range	
Tulelake, CA	2012	8.02	6.83 - 9.22	[8]
Washington	1980-81	5.81	4.18 - 8.33	[4]
Minnesota	1994-95	5.94	4.08 - 6.91	[7]
Wisconsin	2000-02	6.37	5.19 - 8.14	[1]
Various		6.16	4.61 - 7.1	[5]
Various		6.05		[6]
Weighted Average		**6.24**	**4.08 - 9.22**	

Use N Removal Data for Crops in your Region

Location	Years	Removal (lbs N/ton fresh weight)		Source
		Mean	Range	
Salinas, CA	2012-13	9.0	7.73 - 11.64	[6]
Arizona	2000	11.3	11.01 - 11.91	[8]
Canada	2001-02	12.5	11.58 - 14.5	[1,2]
Canada	1990-91	12.4	7.48 - 19.01	[9]
Spain	1996	10.5		[5]
Various		11.6		[4]
Weighted Average		**11.2**	**7.48 - 19.01**	

Broccoli N uptake curve



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The N removal Uptake Curve can also Help Plan Application Amounts & Timing
Example Strawberry

Location	Years	Yield (lbs/acre)	Yield (cwt/acre)	Aboveground N (lbs/acre)	Harvested N (lbs/acre)	Harvested N (lbs/cwt)	Source
Salinas and Pajaro Valley	2010-11	71,600	716	190	95	0.133	[1]