



2019-2020 Foliar Fertilizer Trial

Foliar Fertilizer Trial

PROJECT TIMEFRAME: 2019 – 2020

LOCATION:

UMaine Blueberry Hill Farm Experiment Station, Jonesboro ME

OBJECTIVES:

1. Evaluate new fertilizer products
2. Monitor pest incidence & pressure



Products & Funding

Foliar fertilizer companies are interested in selling their product to wild blueberry growers in Maine.

Products were donated by the companies.

All other aspects of the project were funded by a **State of Maine Specialty Crop Block Grant.**



Information in this presentation is provided purely for educational purposes. No endorsement of products or companies is intended, nor is criticism of unnamed products or companies implied.

Fertilizer Treatments

Fertilizer				Application		
Brand / Type	Material	Content	Rate	Crop Cycle	#/Season	Method
Control	None	N/A	N/A	N/A	N/A	N/A
DAP	Granular	Diammonium phosphate	80 lbs. N/A	Prune	1	Broadcast, by hand
SeaCrop16	Liquid	Cytokinin (PGR)	41 oz/A	Prune	4	Backpack Sprayer
Salvador	Liquid	14-4-6	0.5 gal/A	Prune	4	Backpack Sprayer
Agro-Phos	Liquid	0-29-5 + 4% Mg	0.5 gal/A	Prune	4	Backpack Sprayer
Kali-T	Liquid	2-0-24 + Si	0.5 gal/A	Crop	4	Backpack Sprayer
NanoGro	Liquid	7-10-1 + PGR	4 oz/A	Crop	4	Backpack Sprayer
Poma	Liquid	0-0-0 + 6% Ca	0.5 gal/A	Crop	4	Backpack Sprayer

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** Only OMRI approved / certified organic product used in this trial*

2019 Foliar Products

Made by the North American Kelp Company:

Seacrop16 – Active ingredient obtained from kelp extract

Naturally contains **cytokinin (PGR)** + naturally occurring micronutrients from the kelp.

Growth hormone assoc. with enhanced plant growth and bud development (cell division).

OMRI approved / certified organic

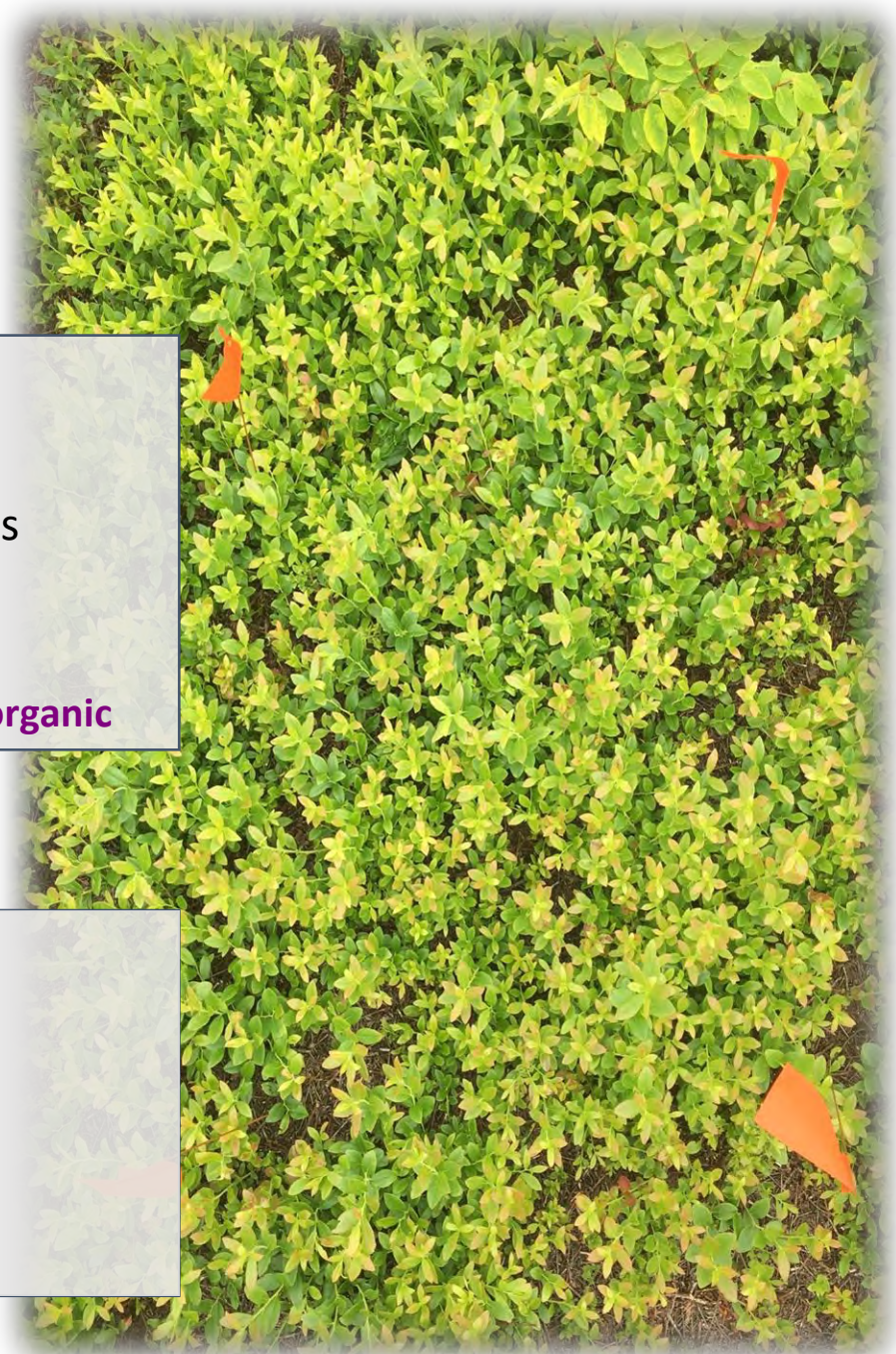
Made by Agro-100:

Salvador - General crop growth

14-4-6 + micronutrients (Zn, Mg, Mn, B, Mo)

Agro-Phos – Root growth

0-29-5 + 4% Mg





Foliar App. Dates:

June 12th

July 9th

August 21st

September 10th

DAP, Applied:

June 12th

Method of application: Backpack sprayer + product (recommended rate/gallon/acre) over a 6 x 30' plot .
DAP was applied by hand.

Throughout the Field Season..

Crop Physiology

Stem length, chlorophyll content and anthocyanin content, photosynthetic rates, leaf area, dry weight and nutrition.

Productivity

Overall blueberry cover, stem height, number of buds/stem.

Pest Pressure

Weed, insect and disease pressure.

Blueberry cover and pest pressure were visually quantified using a ranking system within a designated quadrat.





Preliminary Results

Leaf Nutrients

Blueberry Productivity

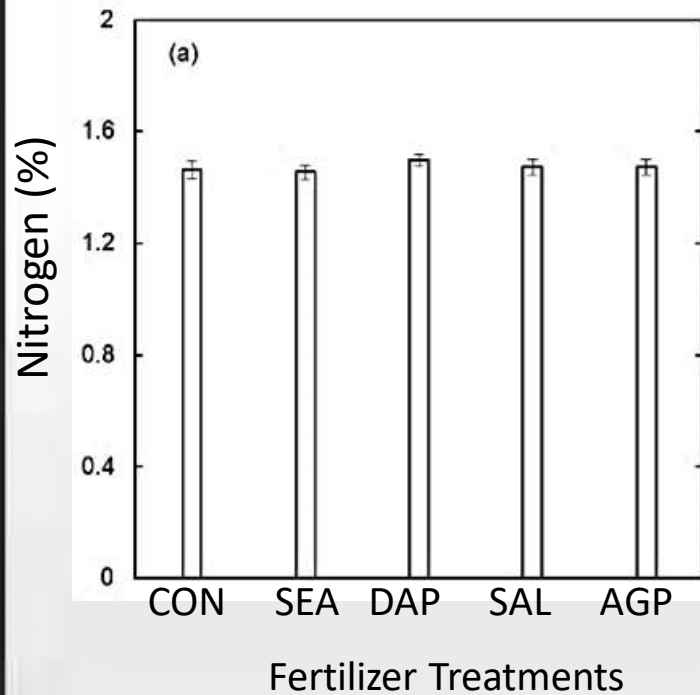
Pest Pressure

*For more detail, please refer to page 51 of the
2019 Wild Blueberry Report.*

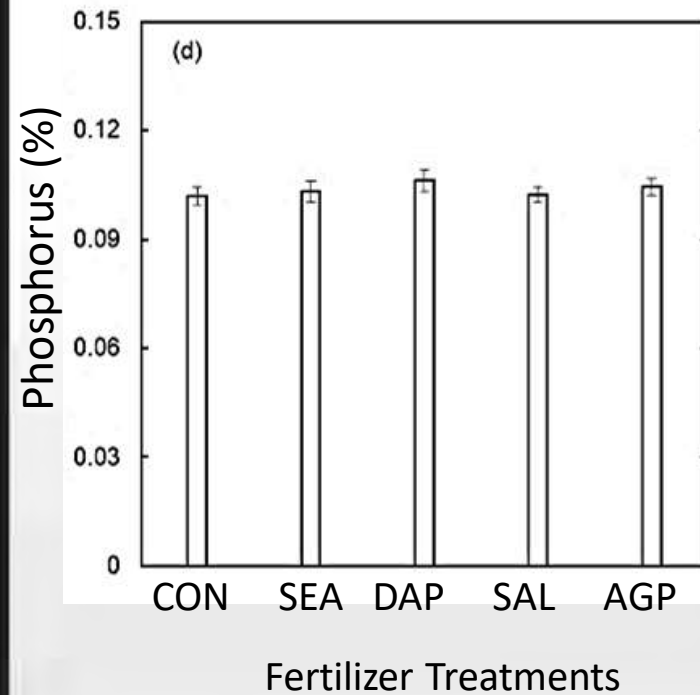
Macronutrients per Leaf Mass (%)

No Significant differences observed

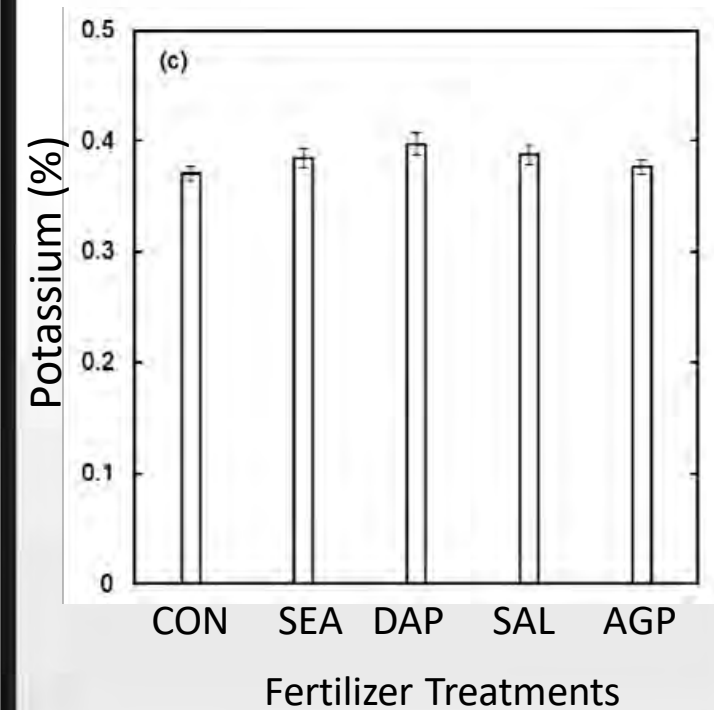
Nitrogen



Phosphorus



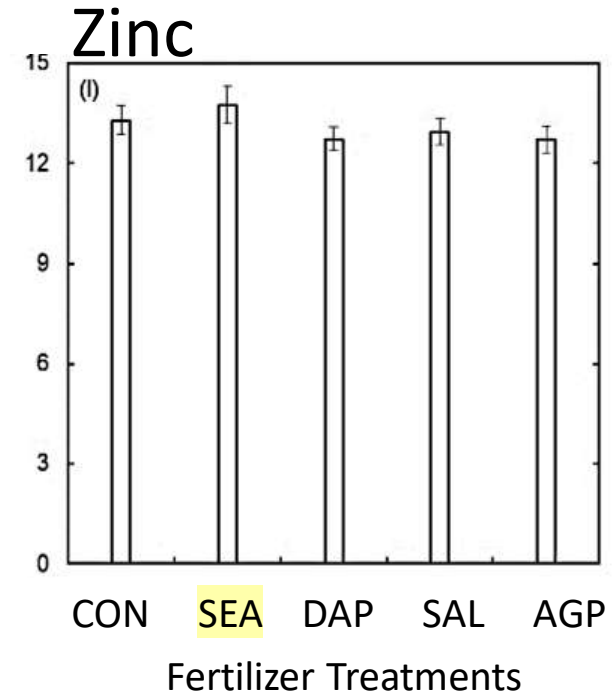
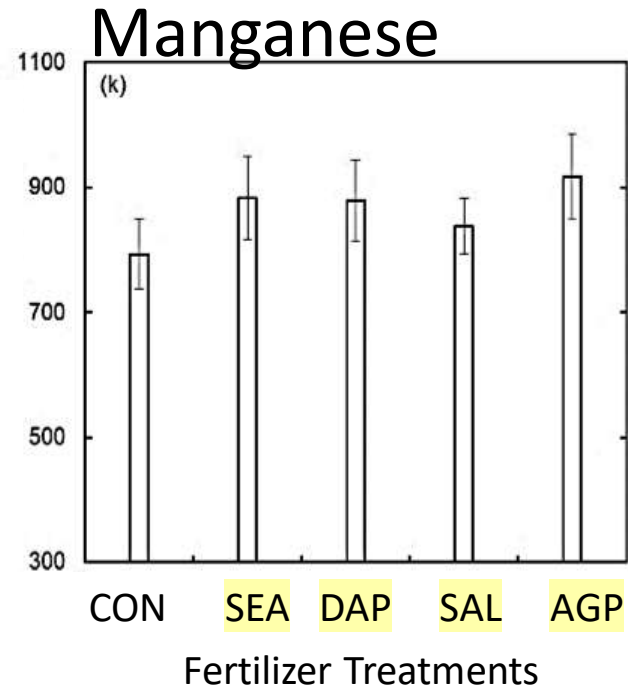
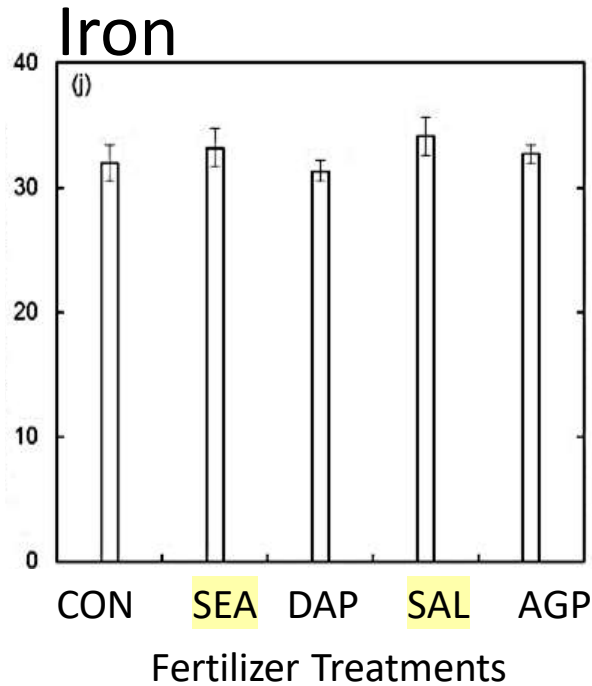
Potassium



CON = Control, **SEA** = SeaCrop, **DAP** = Diammonium Phosphate, **SAL** = Salvador, **AGP** = AgroPhos

Micronutrients per Leaf Mass (ppm)

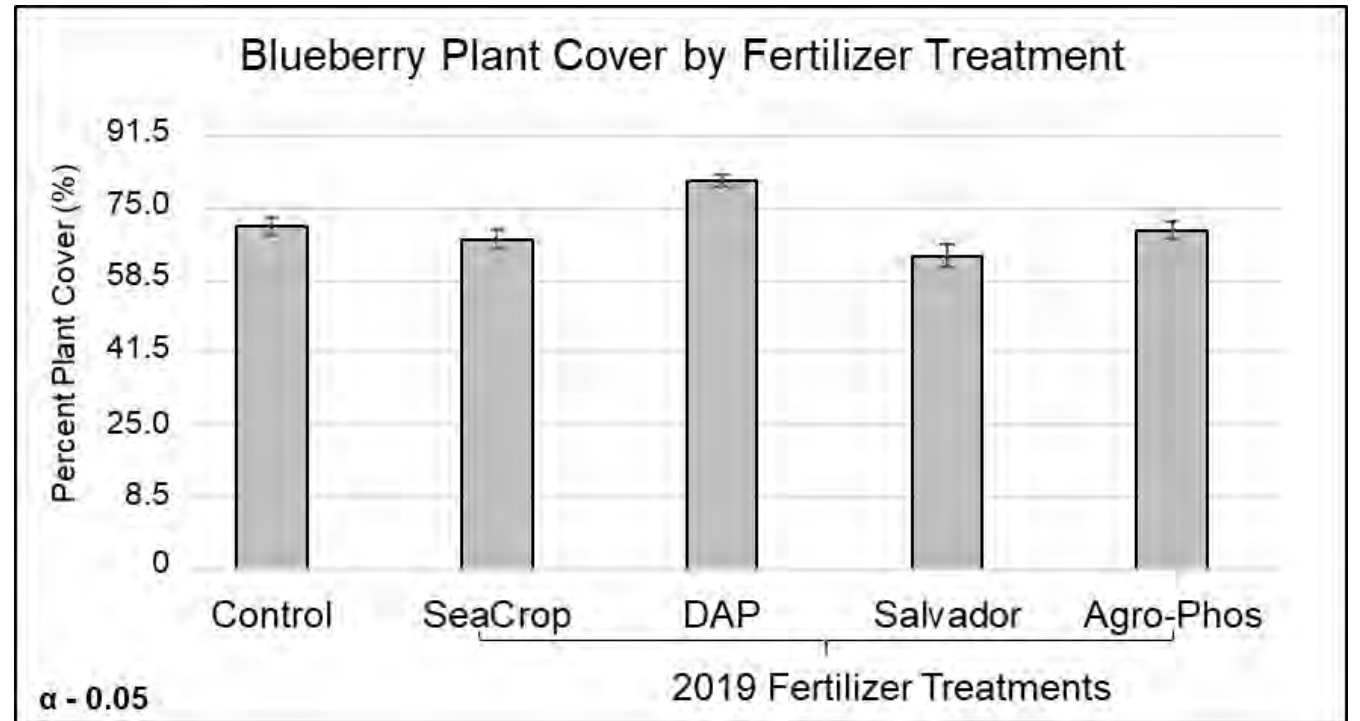
No Significant differences observed



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Blueberry Plant Cover

No Significant differences observed

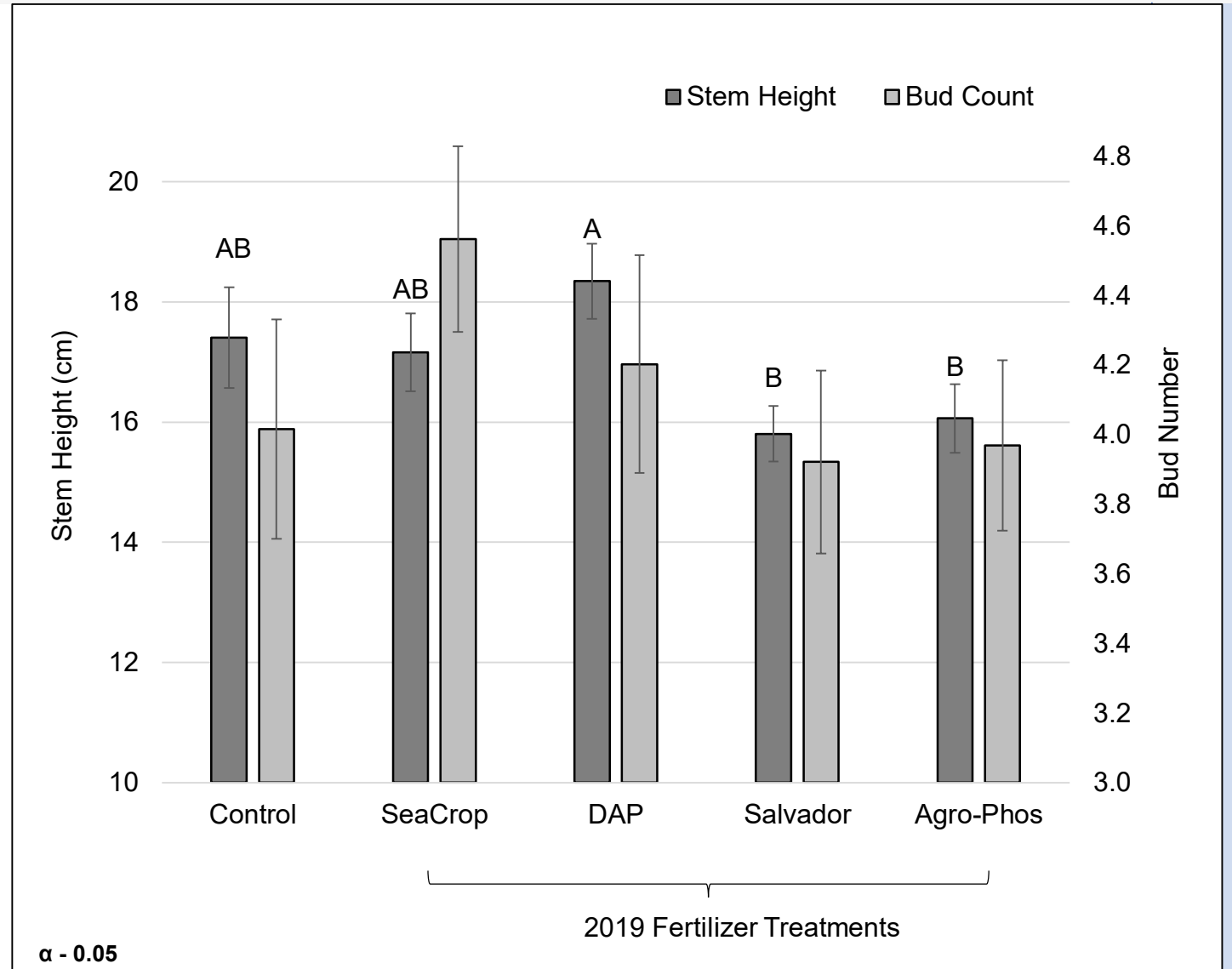


Average Stem Height & Bud Count by Fertilizer Treatment

Significant differences in stem height ONLY.

DAP > Salvador & Agro-Phos

Although not significant → SeaCrop had the greatest # of buds/stem

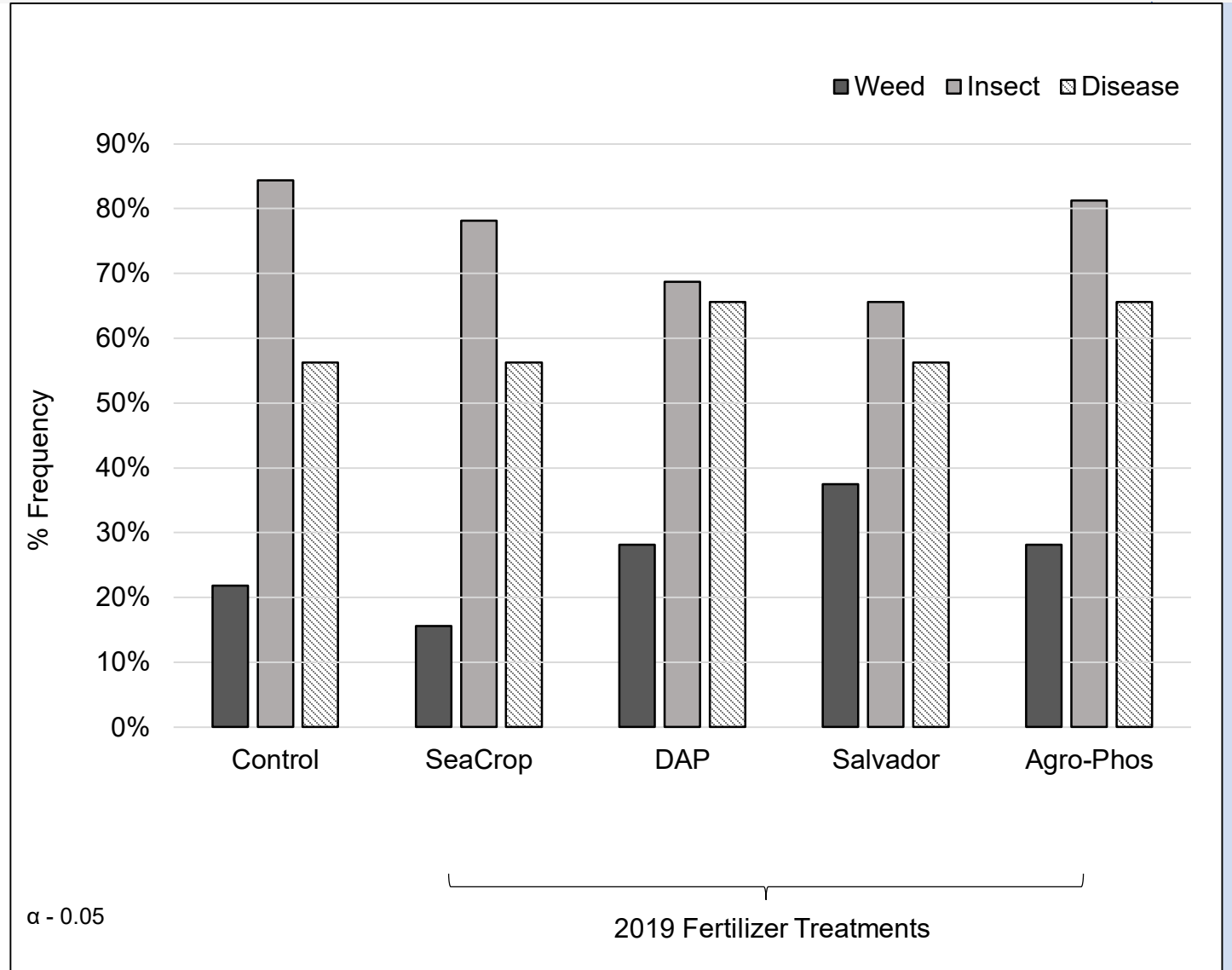


Frequency of Pest Pressure by Fertilizer Treatment

No Significant differences observed

Compared to Control:

- *all treatments < insect pressure*
- *DAP, SAL, & AGP > weed pressure*
- *DAP & AGP > disease pressure*



Type	Rate	Cost/unit	Application Cost (\$/acre/app.)	Seasonal Cost (\$/acre/season)
DAP	80 lbs N/A	\$ 18.00/50lb bag	\$158.00	\$158.00
SeaCrop16	41 oz/A	\$ 49.00/Gal	\$10.57	\$42.28
Salvador	0.5 gal/A	\$ 15.38/Gal	\$7.69	\$30.76
Agro-Phos	0.5 gal/A	\$ 33.95/Gal	\$16.98	\$67.92
Kali-T	0.5 gal/A	\$ 26.12/Gal	\$13.06	\$52.24
NanoGro	4 oz/A	\$ 48.00/Gal	\$6.00	\$24.00
Poma	0.5 gal/A	\$ 17.98/Gal	\$8.99	\$35.96

What is the Cost?!

Cost per Season Estimates:

DAP → 1 application/season.

In 2019 this was 440lb/acre based on leaf nutrient analysis.

Foliar Spray → 4 applications/season

Seasonal cost estimates do not account for labor costs.

Next Steps

1. Apply Crop-Cycle Fertilizer
2. Quantify any Winter Damage
3. Continue to Monitor
Crop Physiology, Productivity and Pest Pressure
4. Quantify Premature Fruit Drop
5. Harvest Fertilizer Treatments to Compare Yield



The 2020 crop-cycle is essential prior to drawing final conclusions and recommendations on the use of these products on wild blueberry.

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Thank you for
your time