Ingeplant Carboxi poliol®

Ingeplant
Crop Nutrition Engineering

SWEET POTATO TRIALS (Japonesa)

CARBOXIPOLYOL technology is based on compounds that emulate the natural chelation and complexation from the plant, which may complement soil nutritional management, potentiate photosynthesis processes, translocation of photoassimilates.

CARBOXYPOLYOLS are molecules of organic origin from plant extracts of low molecular weight and highly soluble in water, obtained from the transformation of carbohydrates to aldonic acids that bind to a metal ion to form stable compounds in water and soil through ionic bonds and covalents.

Innovation in Vegetable Chelates and biostimulants.

Vegetable organic chelates and complexes, Eco friendly, nano poly-ionic.

Efficiently management and correction of nutritional deficiencies (Ca, Mg, B, Zn, Cu, Mn, Fe).

Environmental stress management.

Power compensator in critical times of cultivation

Improves stability and promotes mix compatibility.

High concentration in the formulation.

Nutrition and plant health.

Trial details

1. **Location:** Merced CA
2. **Area plot:** 36,9 ft
3. **Volume of water:** 1 Gal/plot
4. **Repetitions per treatment** : 3-4
5. **Planting density:** 14117 plants/acre
6. **Variety:** Japonesa
7. **Applications :** 2 drip applications





Methodology.

#	Treatment	Dose
1	Control	----
2	Actiphyl Algaplant	2 quart/ Acre
3	Actiphyl Kfruto	2 quart/ Acre
4	Glukoplant CalcioBZn	2 quart/ Acre
5	A. Algaplant + A. Kfruto	1 Quart+ 1 Quart/ Acre
6	Glukoplant CaMg	2 quart/ Acre
7	Irriplant Raizfos	2 quart/ Acre

Data analysis and statistics

- Statistical analyses were performed using **RStudio**.

- Assumptions of normality were assessed using the **Shapiro–Wilk test**
- Homogeneity of variances was evaluated using **Levene's test**.

- Data were subject to three-way Analysis of Variance **(ANOVA)**

- "Different letters indicate significant differences among treatments according to Fisher's Least Significant Difference (LSD) test at $P < 0.05$."

ACTIPHYL Kfruto

LIQUID COMPLEX FERTILIZER WITH K, P, B, Zn and Molybdenum

GUARANTEED ANALYSIS

Total Nitrogen (N)..... 0.22%
0.22% Water Soluble Nitrogen
Available phosphate (P_2O_5).....19.4%
Soluble Potash (K_2O) 21.5%
Magnesium (Mg).....0.6%
Boron (B).....0.85%
Molybdenum (Mo).....0.032%
Zinc (Zn).....0.85%

Density at 68°F: 12.68 Lbs/gal

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ACTIPHYL ALGAPLANT

ALGAE AND PROTEIN HYDROLYSATE BASED PLANT FERTILIZER

GUARANTEED ANALYSIS

Total Nitrogen (N).....2.50%
2.50% Water Soluble Nitrogen
Soluble Potash (K_2O).....5.0%

Density a 68°F: 10,01 Lbs/gal

GLUKOPLANT

Calcio BZn

CONCENTRATED SOLUBLE FERTILIZER WITH Ca, B, Zn and Molybdenum

GUARANTEED ANALYSIS

Total Nitrogen (N).....4.6%
4.6% Nitrate Nitrogen
Soluble Potash (K_2O).....4.2%
Calcium (Ca).....7.0%
Boron(B).....1.2%
Molybdenum (Mo) 0.04%
Zinc (Zn)..... 2.3%

Density at 68°F: 12.09 Lbs/gal

IRRIPLANT

Raízfos

MULTI-NUTRIENT SOLUBLE FERTILIZER WITH P, Mg, Zn and Molydenum.

GUARANTEED ANALYSIS

Total Nitrogen (N).....5.00%
4.25% Ammoniacal Nitrogen
0.75% Water soluble Nitrogen
Available phosphate (P_2O_5).....21.0%
Soluble Potash (K_2O).....4.00%
Molybdenum (Mo).....0.03%
Zinc (Zn).....0.06%

Density a 68°F: 10,5 Lbs/gal

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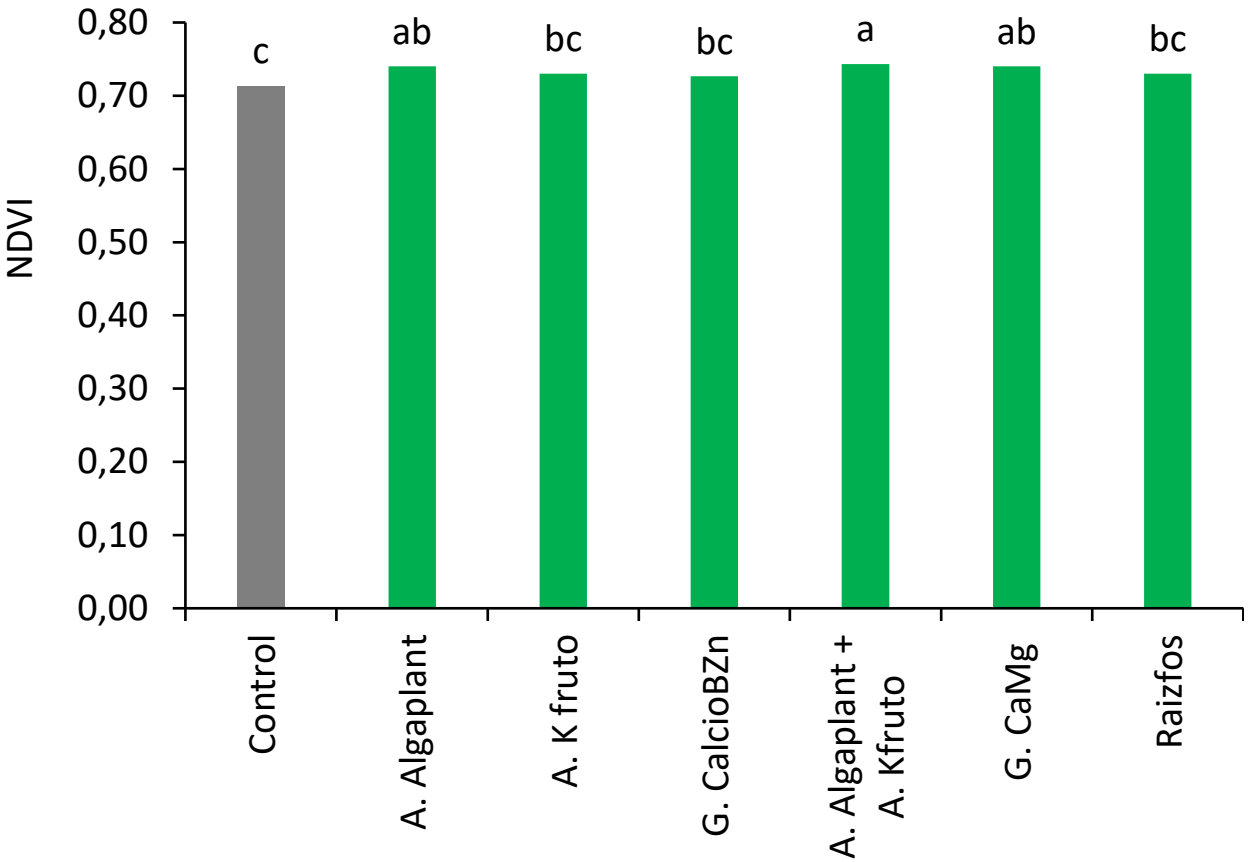
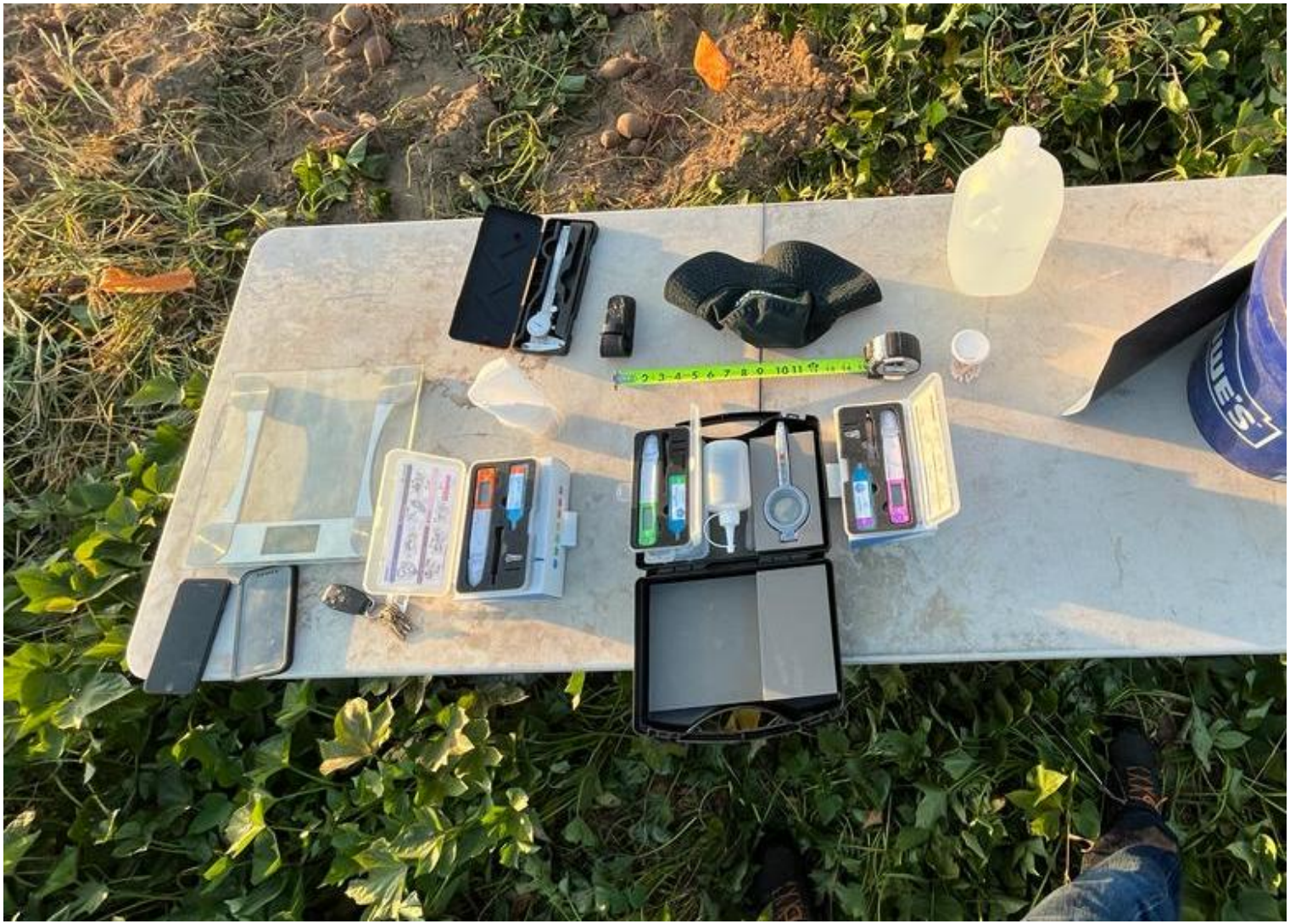
Greenness index (NDVI)

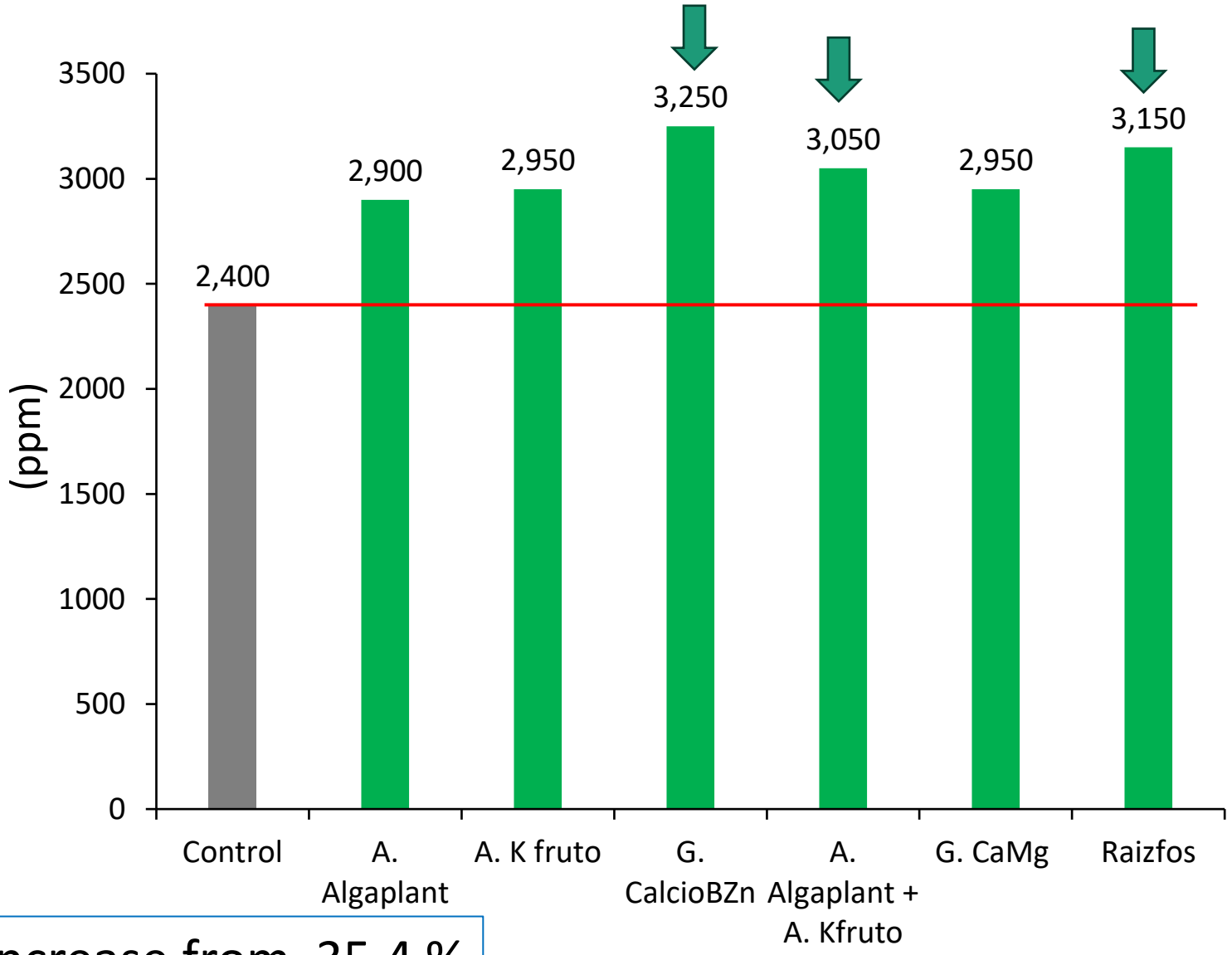


Increase from 4,22 %

Fruit nutritional analysis

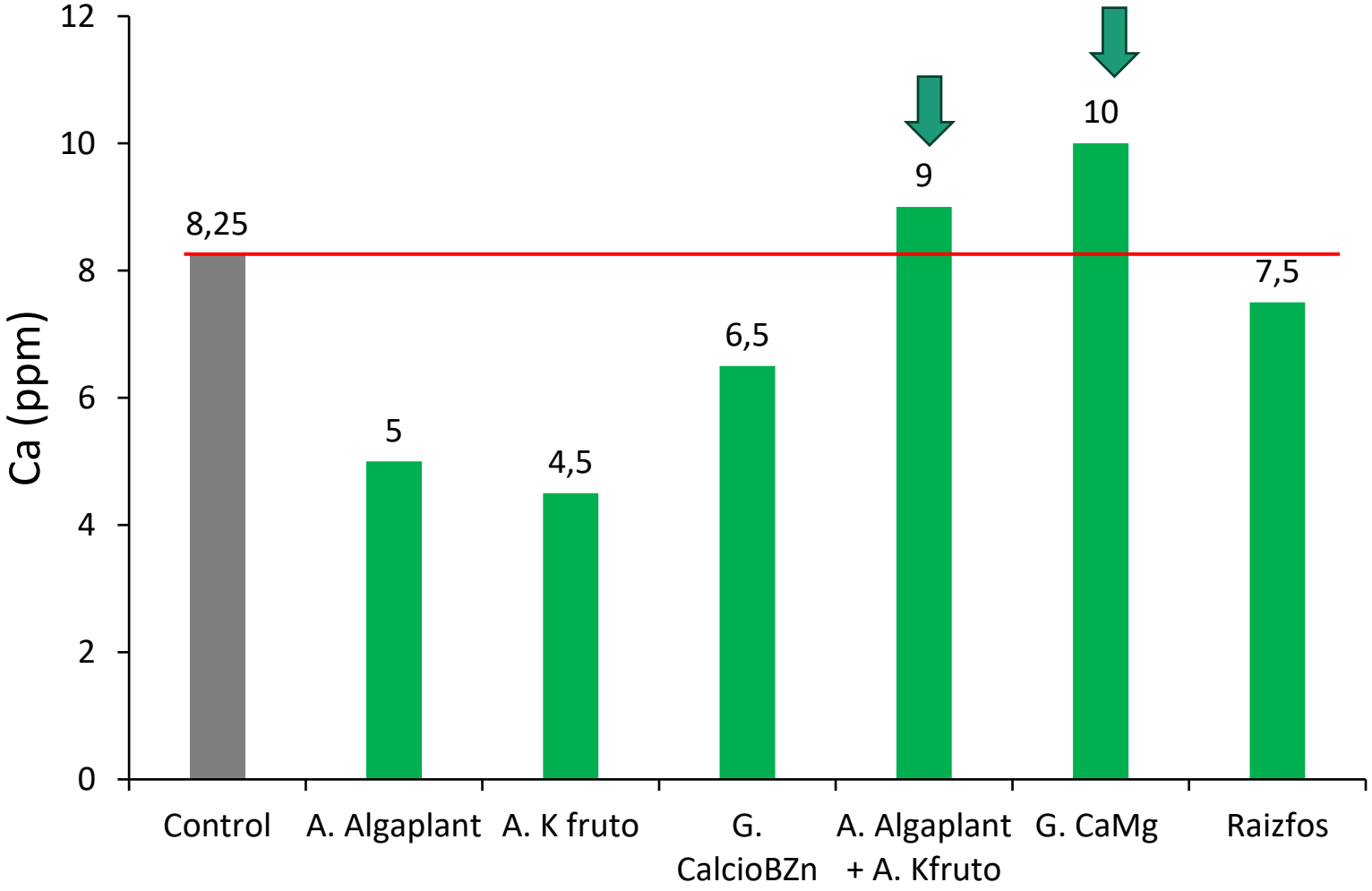


Potassium concentration in sweet potato.



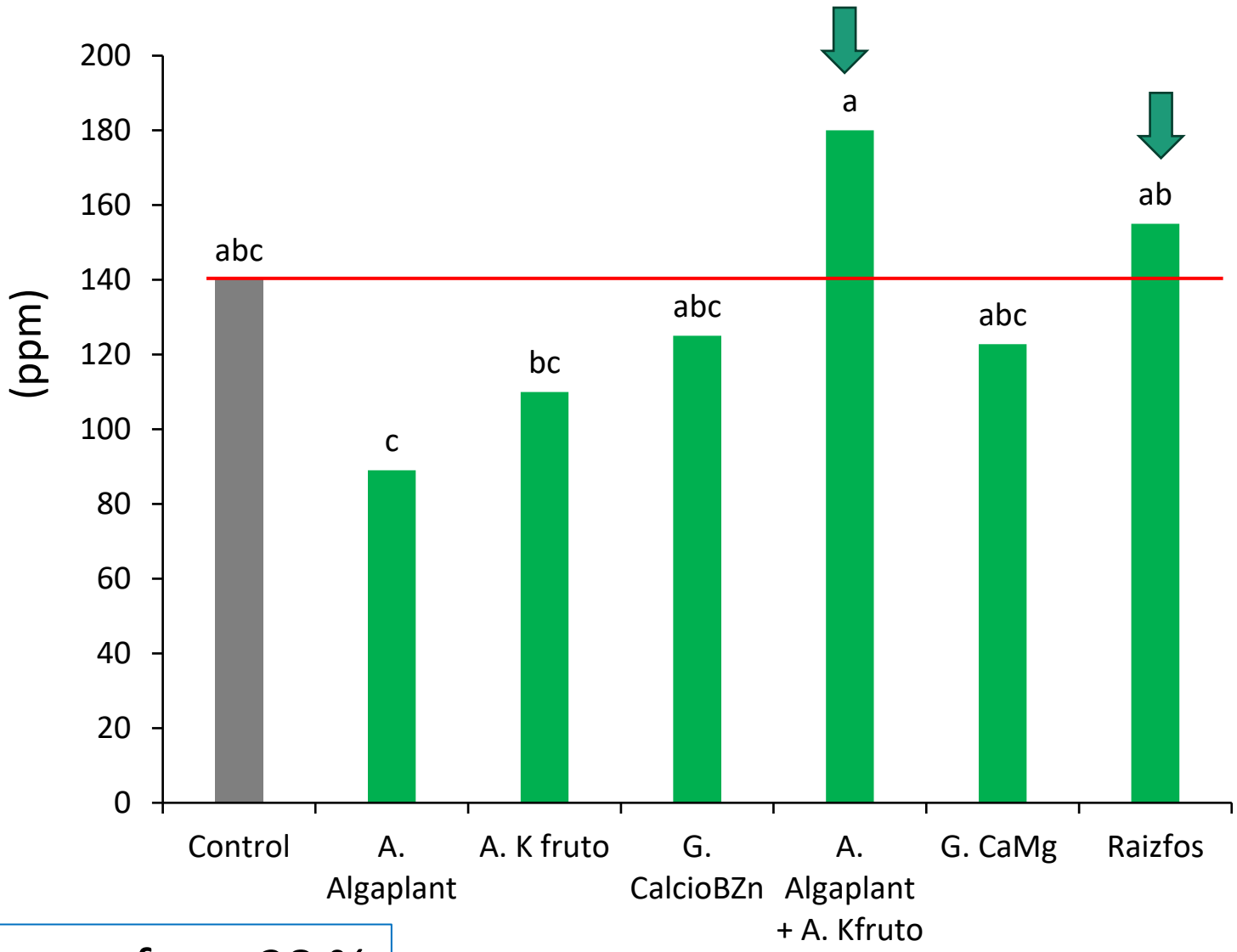
Increase from 35,4 %

Calcium concentration in sweet potato.



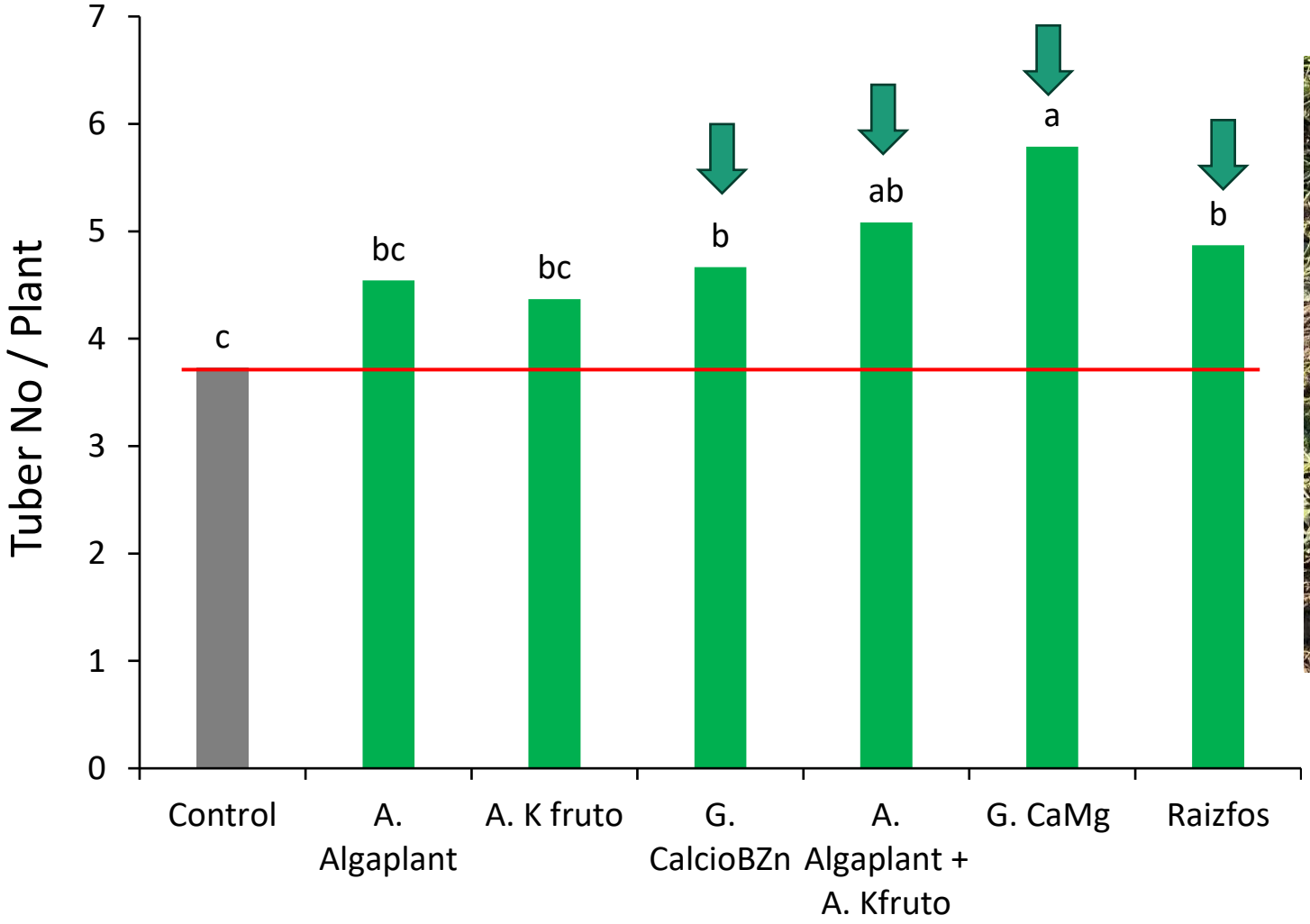
Increase from 21,21%

Nitrates concentration in sweet potato.



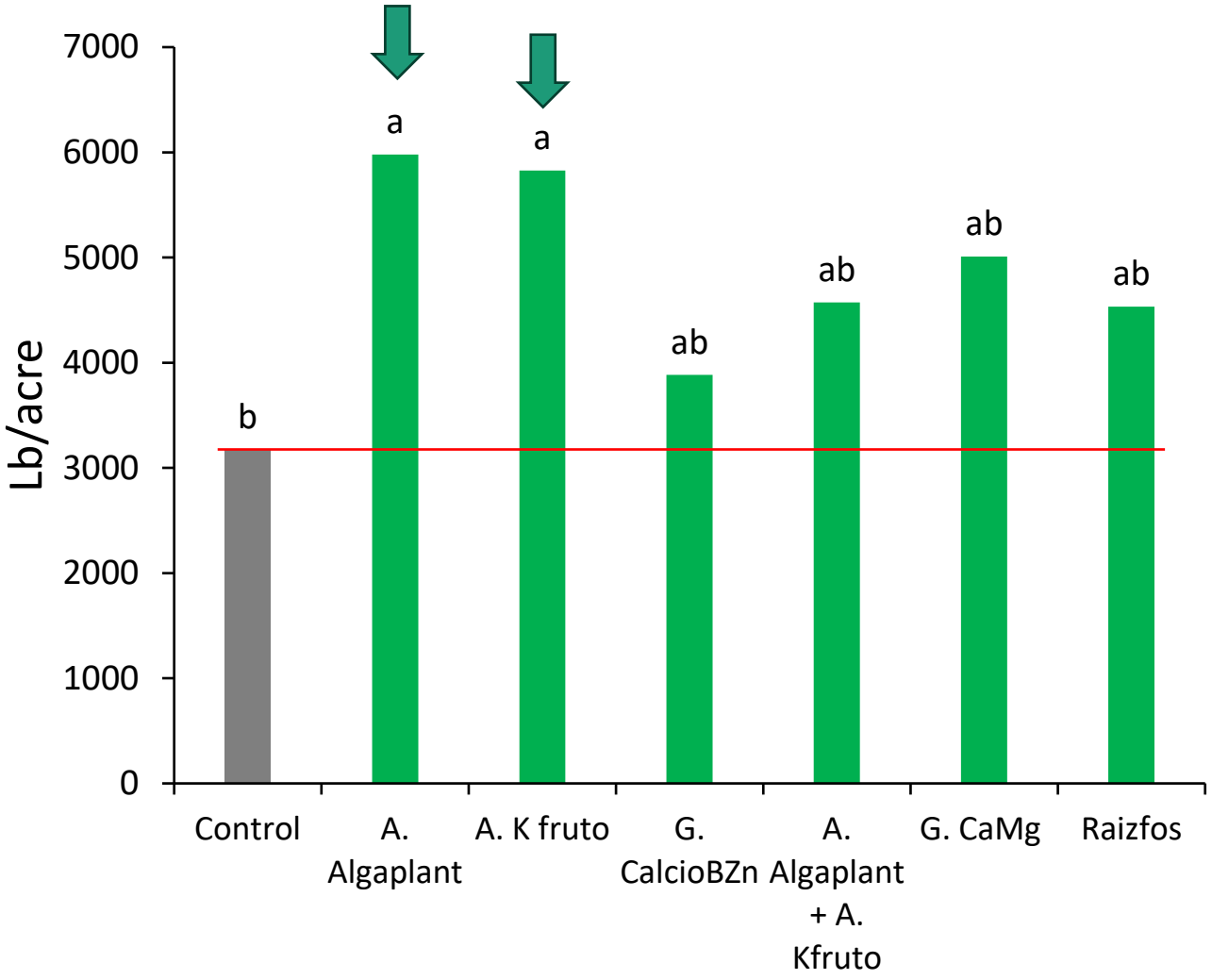
Increase from 28 %

Tuber No/Plant



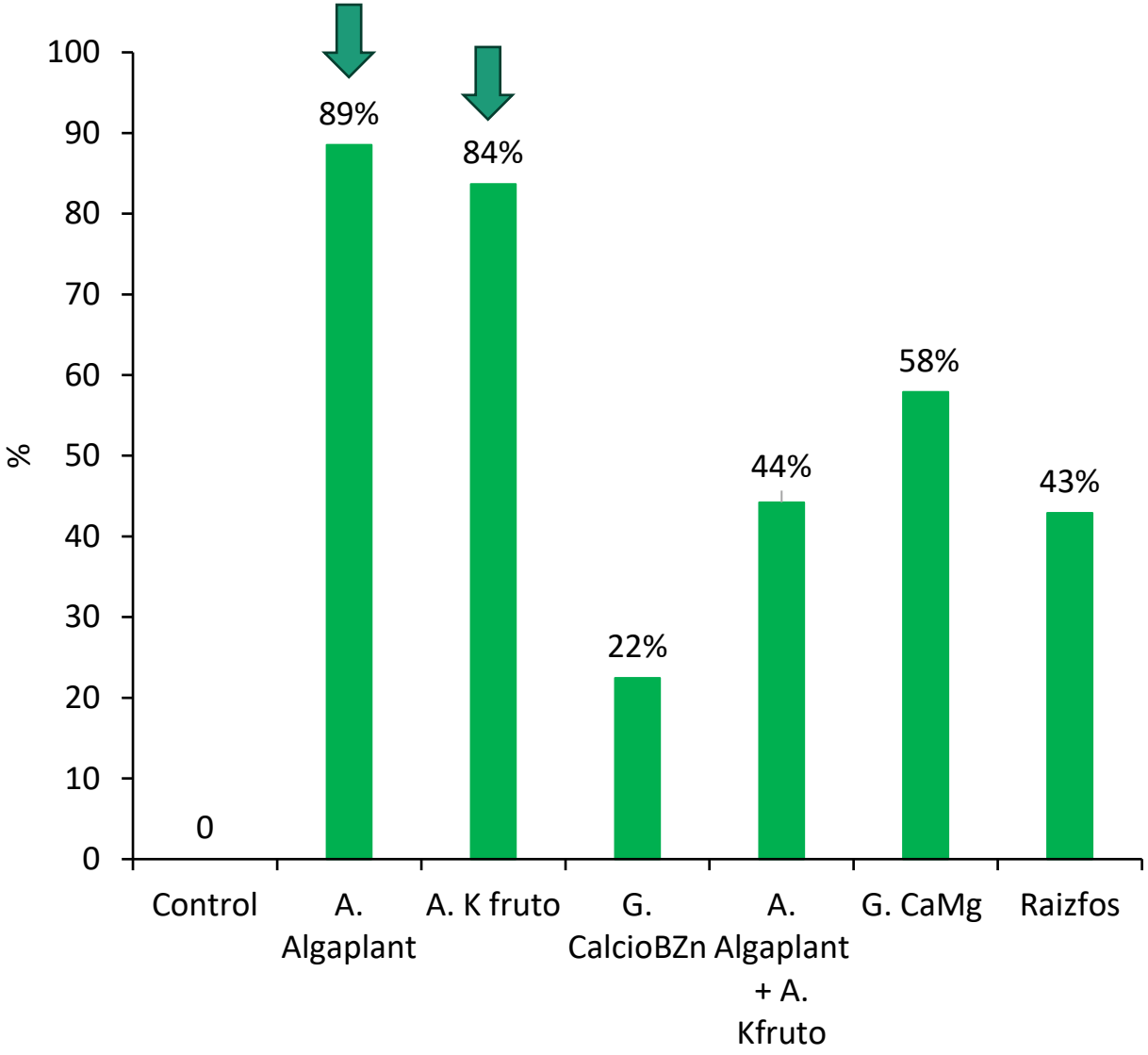
increase from 17 % to 55 %

Jumbo lb/acre



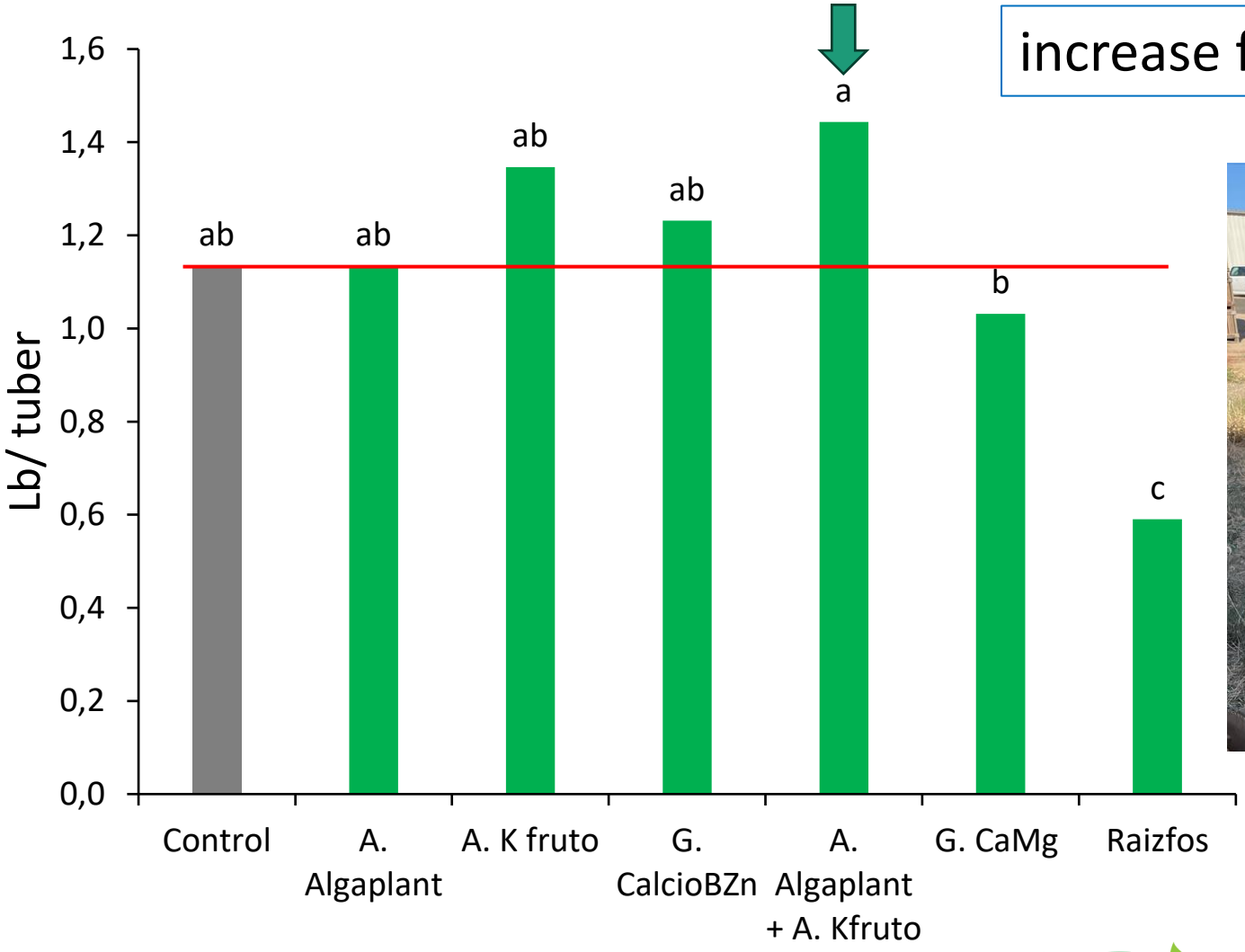
increase from 22 % to 88 %

Relative increase- Jumbo (%)



Control

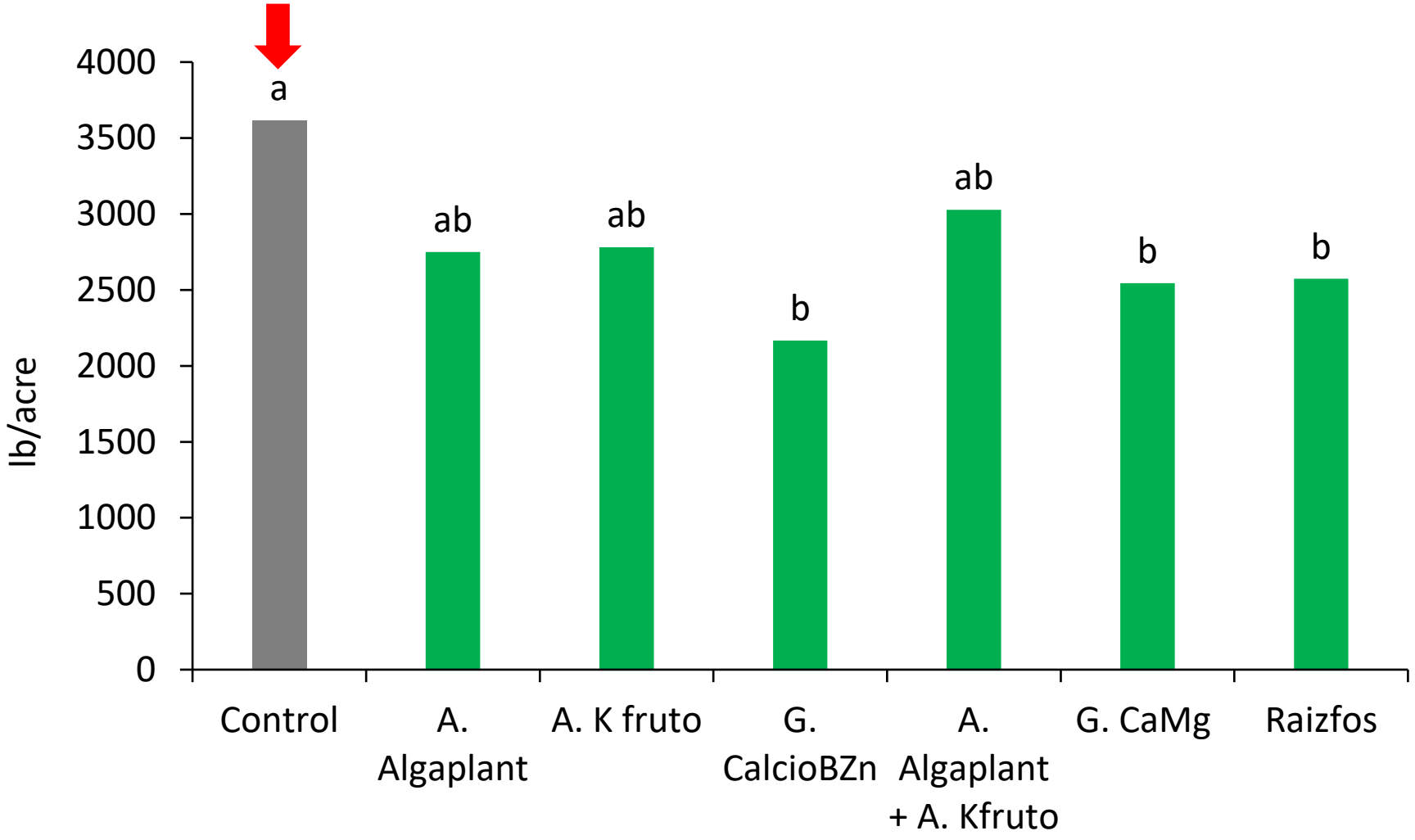
First Lb/tuber



increase from 8% to 20%

Balanced nutrition and **biostimulant synergy** improved tuber filling and quality.

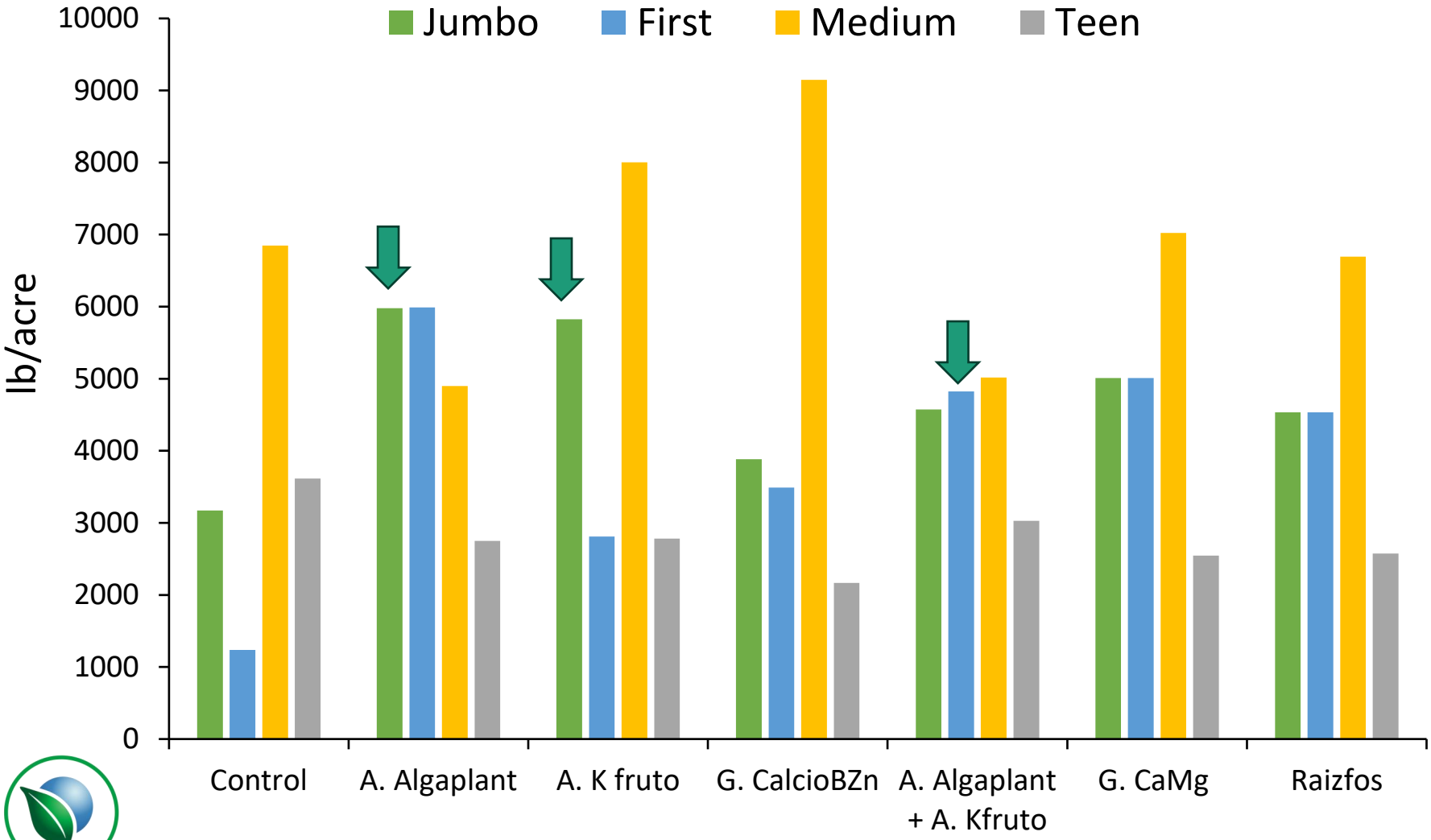
Quality Tuber FW lb/Acre - Teen



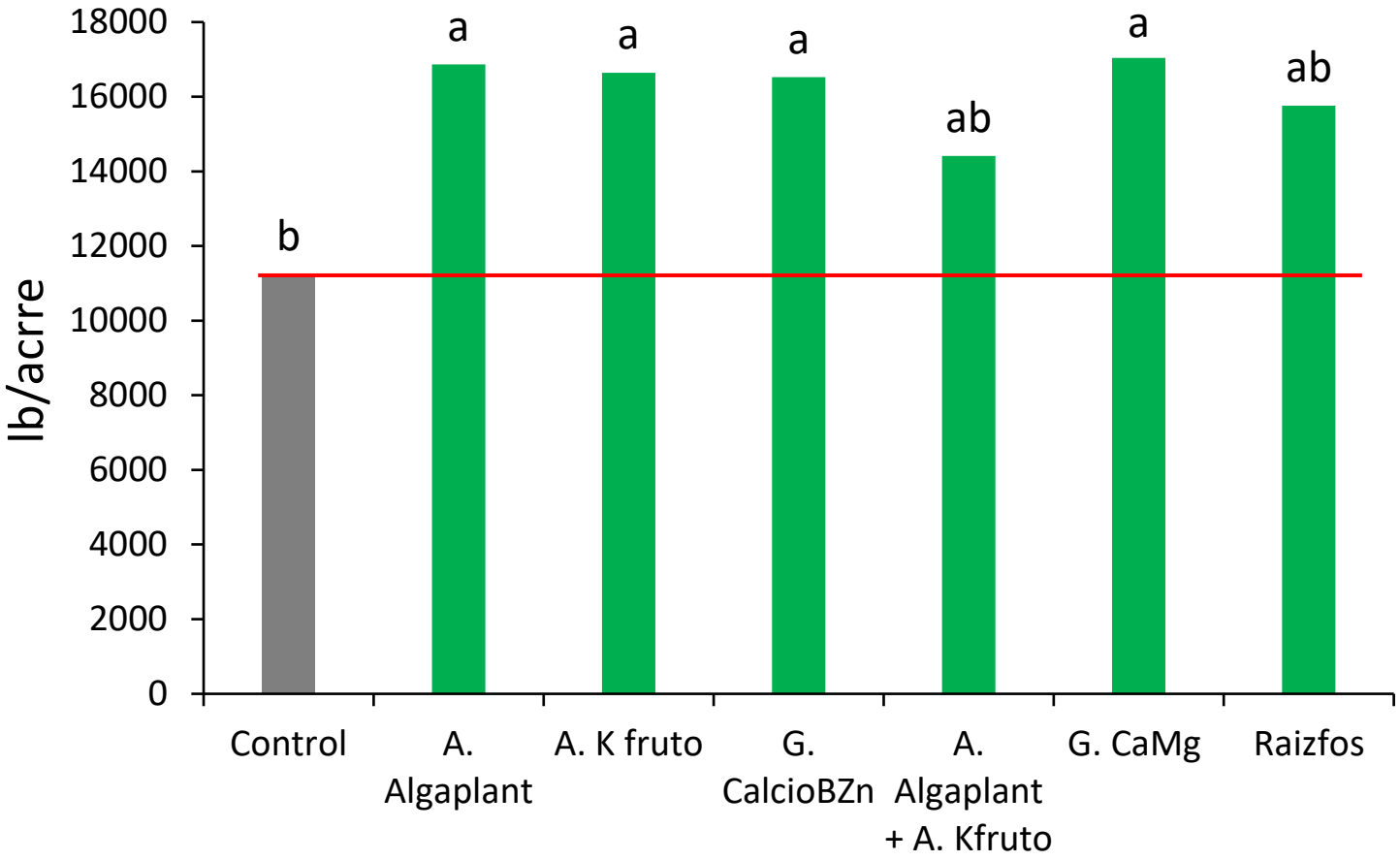
The control produced more small tubers, likely due to **reduced nutrient** availability and tuber bulking.

Quality Tuber FW lb/Acre

Increase up to:
Jumbo: 88 %
First: 384%
Medium: 33 %

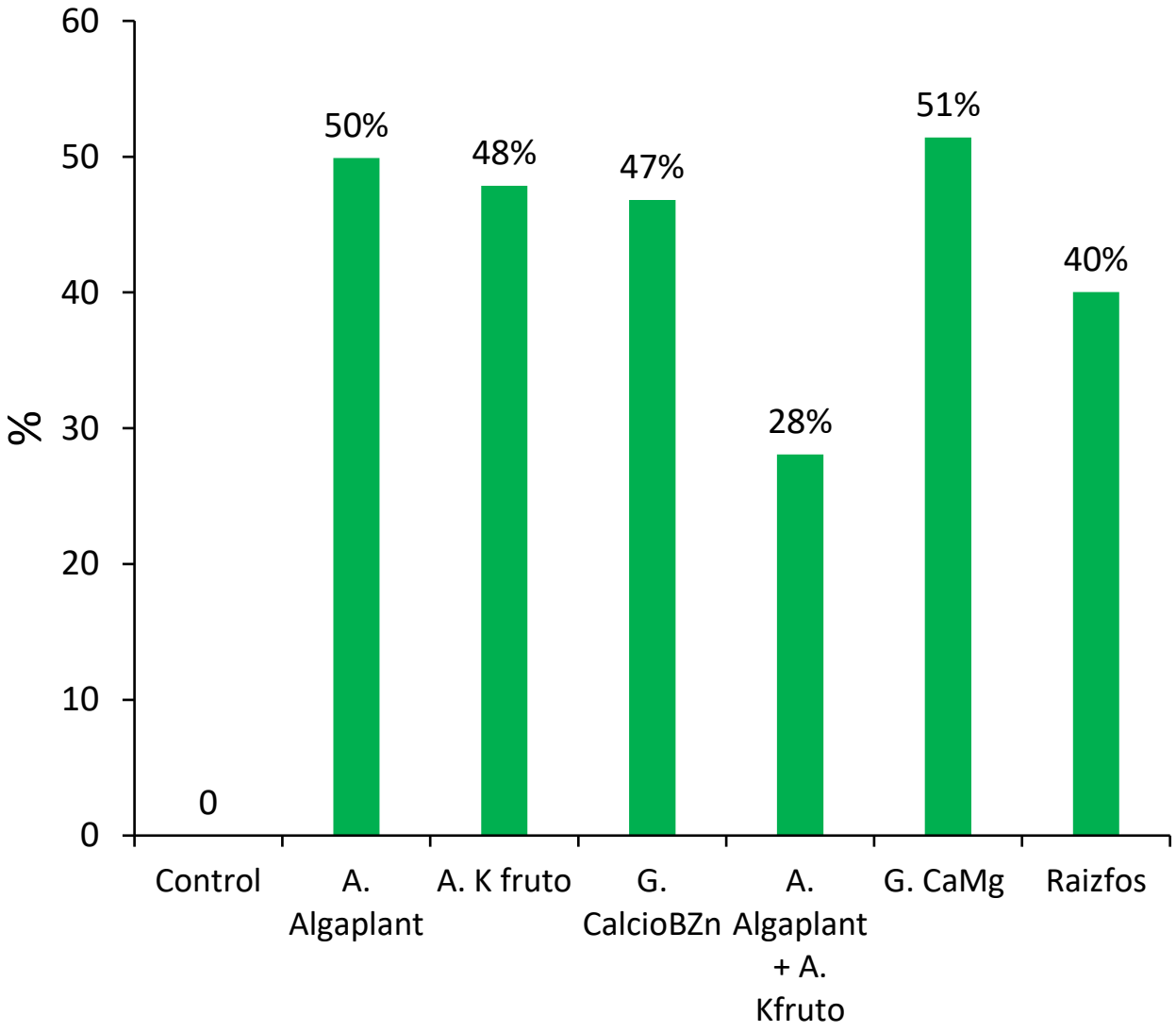


Total FW lb/acre- Comercial

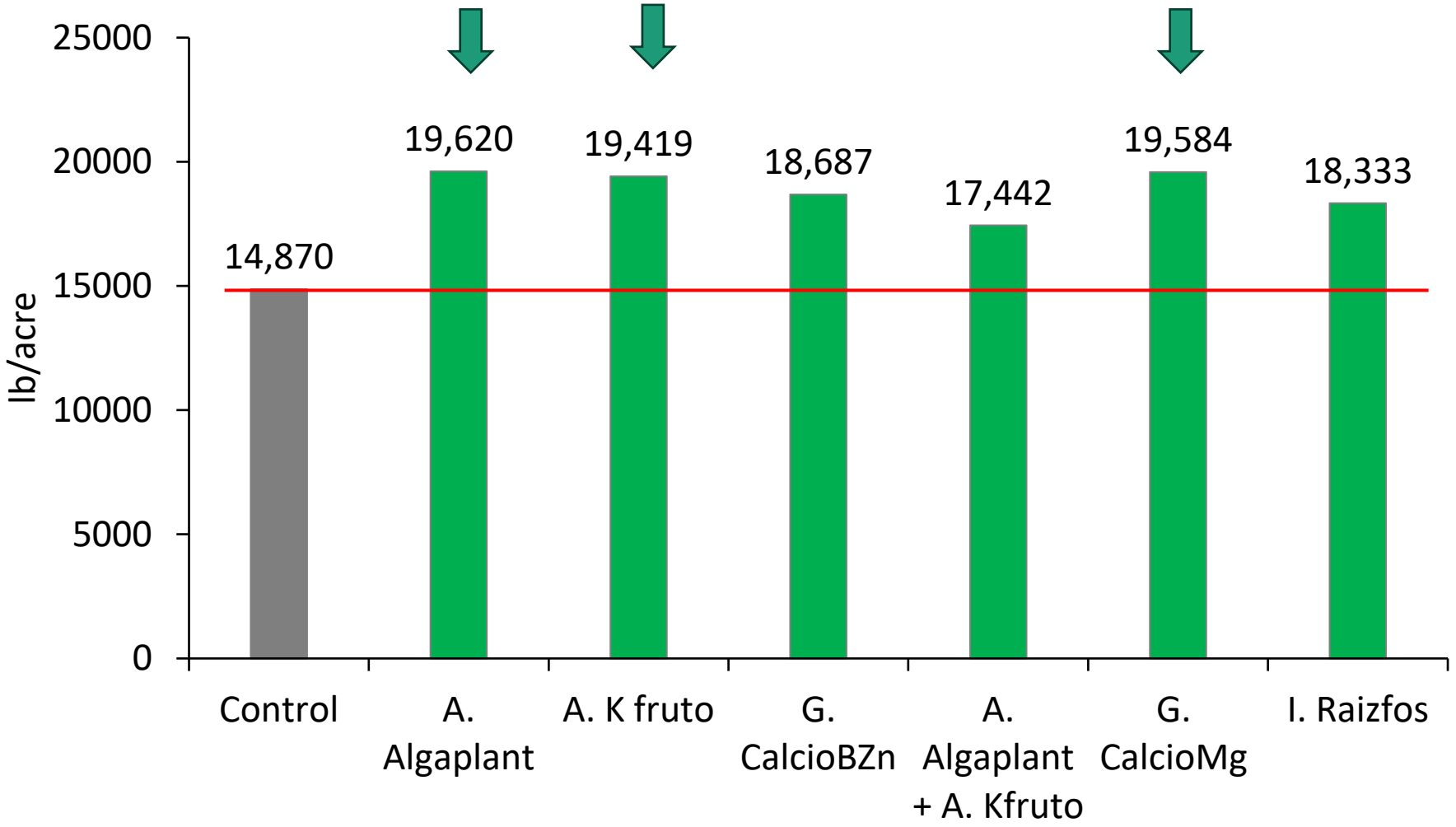


Increase from 40% to 51 %

Relative increase Comercial- Yield (%)

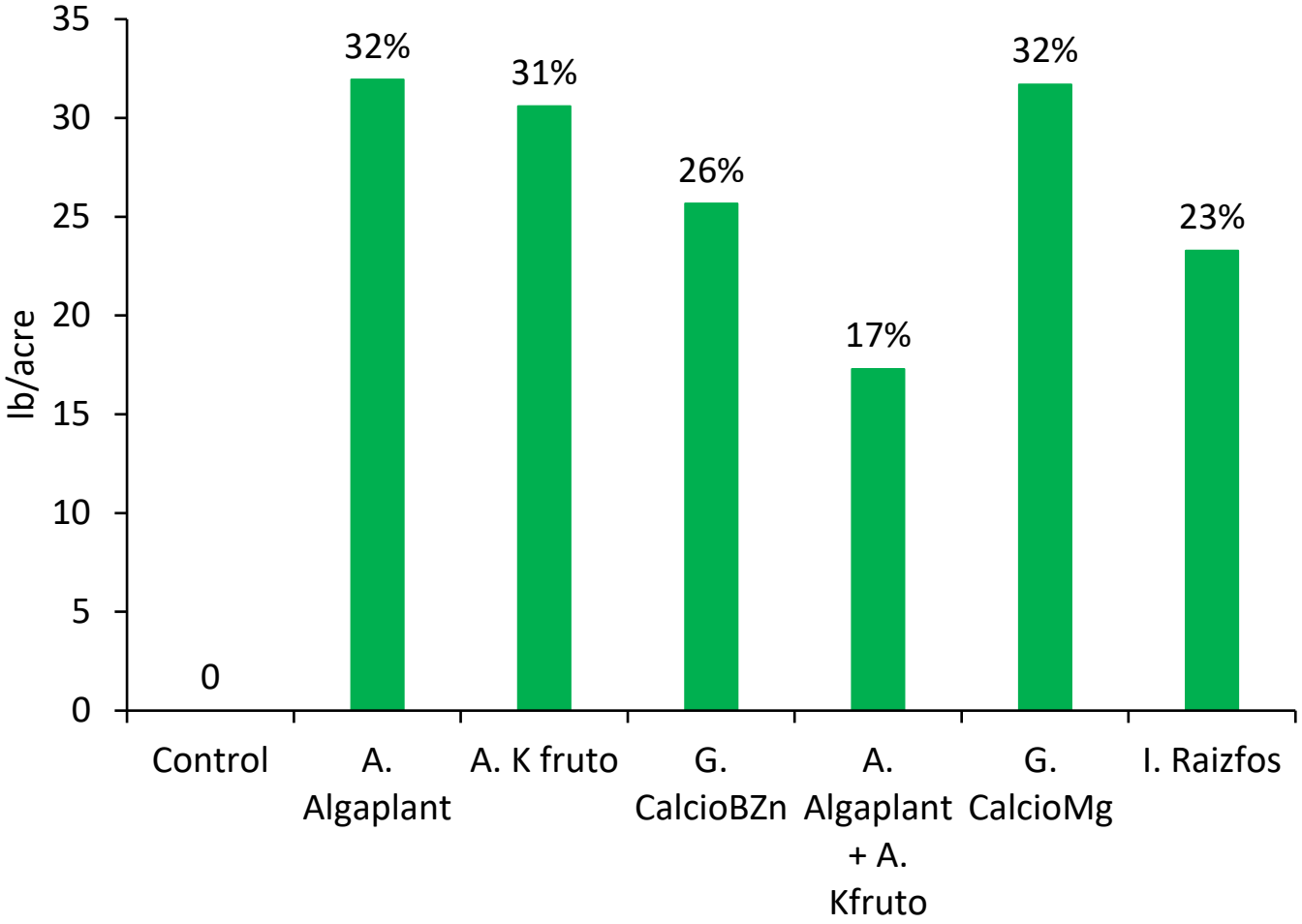


Total FW lb/acre



Increase from 17 % to 32%

Relative increase TOTAL- Yield (%)



Analysis

Treatment	Income/acre JUMBO- US	Income/acre FIRST - US	Income/ acre MEDIUM- US	Income/acre TINY-US	Income /acre TOTAL- US	Difference US
Control	$ 120,520	$ 46,952	$ 260,180	$ 90,406	$ 518,057	
A. Algaplant	$ 227,208	$ 227,657	$ 186,163	$ 68,763	$ 709,792	$ 191,735
A. K fruto	$ 221,377	$ 106,763	$ 304,141	$ 69,501	$ 701,782	$183,725
G. CalcioBZn	$ 147,585	$ 132,557	$ 347,654	$ 54,155	$ 681,950	$ 163,893
A. Algaplant + A. Kfruto	$ 173,827	$ 183,247	$ 190,649	$ 75,699	$ 623,422	$ 105,364
G. CaMg	$ 190,312	$190,312	$ 266,908	$ 63,599	$ 711,132	$ 193,075
Raizfos	$ 172,257	$ 172,257	$ 254,348	$ 64,337	$ 663,198	$ 145,141

Quality Tuber	Increase up to
Jumbo	89%
First	385%
Medium	34%

Treatment	Total Increase up to
A. Algaplant	37 %
A. K fruto	35%
G. CalcioBZn	32%
A. Algaplant + A. Kfruto	20%
G. CaMg	37%
Raizfos	28%

Conclusions

- The treatments **Actiphyl K-Fruto**, **Actiphyl Algaplant**, **Glukoplant CalcioBZn** and **Glukoplant CalcioMg** have a significant increase in the variable "FW total lb/acre- Commercial" with an increase from 41% to 51%.

- The treatments A. Algaplant, A. Kfruto G. CalcioMg and G. CalcioBZn increased by 37%, 35%, 37% and 32%, respectively, the revenue per acre on Japanese variety sweetpotato.

- Actiphyl KFruto supported carbohydrate translocation and tuber development.
- Algaplant enhanced tuber bulking through biostimulant activity.

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Thank You