



PLANT & TISSUE GUIDELINES - VEGETABLES

Logan Labs, 620 North Main Street, Lakeview, OH 43331
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ARTICHOKES

Survey Average

Macronutrients	%	Micronutrients	ppm
N	5	B	39
P	1	Cu	14
K	5	Fe	300
Ca	1.83	Mn	160
Mg	0.4	Zn	54
S	no data	Mo	no data

BEETS, (SUGAR BEETS) MIDGROWTH

Survey Average

Macronutrients	%	Micronutrients	ppm
N	3.03-4.5	B	25-80
P	0.27-0.51	Cu	13-40
K	2.0-6.0	Fe	50-200
Ca	0.38-1.25	Mn	23-150
Mg	0.38-1.1	Zn	20-60
S	0.9-1.4	Mo	0.18-5.0



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BROCCOLI

Survey Average

Macronutrients	%	Micronutrients	ppm
N	3.2-5.5	B	30-100
P	0.3-0.7	Cu	1-5
K	2.0-4.0	Fe	100-300
Ca	1.2-2.5	Mn	25-150
Mg	0.23-0.4	Zn	45-95
S	no data	Mo	no data

CABBAGE HEAD HALF GROWN (YOUNG WRAPPER LEAF)

Survey Average

Macronutrients	%	Micronutrients	ppm
N	3.0-4.0	B	30-60
P	0.3-0.5	Cu	7-40
K	3.0-4.0	Fe	40-250
Ca	1.5-3.5	Mn	40-200
Mg	0.25-0.45	Zn	20-30
S	no data	Mo	no data



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CANTALOUPE (MUSKMELON), 12 UNFURLED LEAVES (5TH LEAF FROM TIP)

Survey Average

Macronutrients	%	Micronutrients	ppm
N	3.0-4.0	B	30-60
P	0.3-0.5	Cu	7-40
K	3.0-4.0	Fe	40-250
Ca	1.5-3.5	Mn	40-200
Mg	0.25-0.45	Zn	20-30
S	no data	Mo	no data

CAULIFLOWER, MATURE LEAF WITH STEM REMOVED

Survey Average

Macronutrients	%	Micronutrients	ppm
N	4.5-4.4	B	25-60
P	0.3-0.8	Cu	7-30
K	4.0-5.0	Fe	50-300
Ca	2.3-3.0	Mn	50-250
Mg	0.35-0.8	Zn	20-200
S	0.25-1.4	Mo	no data



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COLLARDS, ALMOST MATURE LEAVES

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Macronutrients	%	Micronutrients	ppm
N	4.0-5.0	B	50-70
P	0.3-0.6	Cu	no data
K	3.0-4.0	Fe	no data
Ca	3.0-4.0	Mn	no data
Mg	no data	Zn	no data
S	no data	Mo	no data

GARLIC, BULBING

Survey Average

Macronutrients	%	Micronutrients	ppm
N	3.4-4.5	B	no data
P	0.28-0.5	Cu	no data
K	3.0-4.5	Fe	no data
Ca	1.0-1.8	Mn	no data
Mg	0.23-0.3	Zn	no data
S	no data	Mo	no data



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KALE

Survey Average

Macronutrients	%	Micronutrients	ppm
N	4.0-5.0	B	50-80
P	0.3-0.6	Cu	no data
K	3.0-4.0	Fe	no data
Ca	3.0-4.0	Mn	no data
Mg	no data	Zn	no data
S	no data	Mo	no data

LETTUCE, BOSTON TYPE

Survey Average

Macronutrients	%	Micronutrients	ppm	Nonessential Elements	ppm
N	2.0-3.0	B	25-80	Al	750
P	0.4-0.8	Cu	7-50		
K	6-11	Fe	50-100		
Ca	1-3	Mn	25-150		
Mg	0.27-0.9	Zn	25-200		
S	no data	Mo	no data		



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PEAS

Survey Average

Macronutrients	%	Micronutrients	ppm
N	3.1-3.7	B	25-60
P	0.3-0.36	Cu	no data
K	2.3-2.9	Fe	no data
Ca	1.3-1.7	Mn	no data
Mg	0.29-0.26	Zn	no data
S	no data	Mo	no data

ASPARAGUS

Survey Average

Macronutrients	%	Micronutrients	ppm
N	2.4-3.8	B	50-100
P	0.3-0.35	Cu	no data
K	1.5-2.4	Fe	no data
Ca	0.4-0.5	Mn	10-100
Mg	0.15-0.2	Zn	20-60
S	no data	Mo	no data



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BEETS

Survey Average

Macronutrients	%	Micronutrients	ppm
N	3.5-5.0	B	60-80
P	0.2-0.3	Cu	70-200
K	2.0-4.0	Fe	15-30
Ca	2.5-3.5	Mn	no data
Mg	0.3-0.8	Zn	no data
S	no data	Mo	no data

BRUSSEL SPROUTS, MIDGROWTH/YOUNG MATURE LEAVES

Survey Average

Macronutrients	%	Micronutrients	ppm
N	2.2-4.2	B	30-40
P	0.26-0.45	Cu	no data
K	2.4-3.4	Fe	no data
Ca	0.3-2.2	Mn	no data
Mg	0.23-0.4	Zn	no data
S	no data	Mo	no data



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CHINESE CABBAGE, MATURE ENTIRE LEAF

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Macronutrients	%	Micronutrients	ppm
N	0.4-0.6	B	30-50
P	4.5-7.5	Cu	4-6
K	2.0-6.0	Fe	no data
Ca	0.3-0.5	Mn	8-20
Mg	no data	Zn	20-40
S	no data	Mo	no data

CARROTS

Survey Average

Macronutrients	%	Micronutrients	ppm
N	2.3-3.5	B	30-36
P	0.2-0.36	Cu	5-8
K	2.5-4.0	Fe	120-300
Ca	1.4-3.0	Mn	190-300
Mg	0.4-0.5	Zn	20-50
S	no data	Mo	no data



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CELERY

Survey Average

Macronutrients	%	Micronutrients	ppm
N	2.4-3.4	B	30-40
P	0.3-0.5	Cu	5-8
K	4.0-7.0	Fe	20-40
Ca	0.7-3.0	Mn	200-300
Mg	0.2-0.4	Zn	20-50
S	no data	Mo	no data

GARLIC 2

Survey Average

Macronutrients	%	Micronutrients	ppm
N	4.4-5.0	B	no data
P	0.3-0.6	Cu	no data
K	3.9-4.8	Fe	no data
Ca	0.8-1.5	Mn	no data
Mg	0.15-0.25	Zn	no data
S	no data	Mo	no data



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HORSERADISH

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Macronutrients	%	Micronutrients	ppm
N	2.0-3.0	B	25-60
P	0.2-0.3	Cu	10-20
K	2.4-4.0	Fe	50-150
Ca	2.4-3.0	Mn	50-250
Mg	0.24-0.31	Zn	25-200
S	no data	Mo	no data

LETTUC MINETTO & ITHACA TYPES

Survey Average

Macronutrients	%	Micronutrients	ppm
N	1.5-2.0	B	no data
P	0.4-0.6	Cu	no data
K	3.5-9.4	Fe	no data
Ca	1.0-1.9	Mn	no data
Mg	0.5-1.0	Zn	no data
S	no data	Mo	no data



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ONIONS

Survey Average

Macronutrients	%	Micronutrients	ppm
N	1.5-2.5	B	30-45
P	0.25-0.4	Cu	no data
K	no data	Fe	no data
Ca	no data	Mn	no data
Mg	no data	Zn	10-15
S	no data	Mo	no data

WHOLE PEA SWEET TYPE

Survey Average

Macronutrients	%	Micronutrients	ppm
N	3.3	B	no data
P	0.3	Cu	no data
K	1.6	Fe	no data
Ca	1.8	Mn	no data
Mg	0.39	Zn	no data
S	no data	Mo	no data



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PEPPERS

Survey Average

Macronutrients	%	Micronutrients	ppm
N	3.5	B	25-70
P	0.35-0.9	Cu	8-40
K	3.5	Fe	60-200
Ca	1.0-2.5	Mn	60-200
Mg	0.3-0.4	Zn	20-160
S	no data	Mo	no data

POTATOES IRISH

Survey Average

Macronutrients	%	Micronutrients	ppm
N	3.0-5.0	B	25-45
P	0.2-0.4	Cu	6-25
K	4.0-8.0	Fe	65-200
Ca	1.8-4.0	Mn	37-65
Mg	0.45-0.8	Zn	20-40
S	no data	Mo	no data



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SWEET POTATOES

Survey Average

Macronutrients	%	Micronutrients	ppm
N	3.2-4.2	B	no data
P	0.2-0.3	Cu	no data
K	2.9-4.3	Fe	no data
Ca	0.73-0.95	Mn	45-100
Mg	0.4-0.8	Zn	no data
S	no data	Mo	no data

RADISH

Survey Average

Macronutrients	%	Micronutrients	ppm
N	3.0-6.0	B	25-75
P	0.25-0.7	Cu	6-60
K	4.0-7.0	Fe	50-200
Ca	1.0-3.0	Mn	50-300
Mg	0.25-1.0	Zn	25-200
S	no data	Mo	no data



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SNAPBEANS

Survey Average

Macronutrients	%	Micronutrients	ppm
N	5.0-6.0	B	20-75
P	0.3-0.4	Cu	8-200
K	2.25-4.0	Fe	50-300
Ca	1.5-2.5	Mn	50-300
Mg	0.3-1.0	Zn	20-100
S	no data	Mo	no data

GREEN BEANS

Survey Average

Macronutrients	%	Micronutrients	ppm
N	3.0-6.0	B	40-60
P	0.25-0.5	Cu	15-30
K	1.8-2.5	Fe	300-450
Ca	0.8-3.0	Mn	30-300
Mg	0.25-0.7	Zn	30-60
S	no data	Mo	no data



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SPINACH

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Macronutrients	%	Micronutrients	ppm
N	4.2-6.0	B	40-60
P	0.3-0.55	Cu	6-8
K	3.0-4.0	Fe	220-400
Ca	0.65-1.3	Mn	35-65
Mg	0.85-1.2	Zn	50-75
S	no data	Mo	no data

TOMATOES

Survey Average

Macronutrients	%	Micronutrients	ppm	Nonessential Elements	ppm
N	3.0-6.0	B	35-100	Al	<500
P	0.75-1.25	Cu	5-12		
K	3.0-6.0	Fe	50-300		
Ca	1.5-2.6	Mn	40-350		
Mg	0.4-1.0	Zn	30-100		
S	no data	Mo	no data		



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TOMATOES GREENHOUSE

Survey Average

Macronutrients	%	Micronutrients	ppm	Nonessential Elements	ppm
N	3.75-5.0	B	35-60	Al	<200
P	0.5-1.0	Cu	8-20		
K	3.5-4.5	Fe	50-300		
Ca	1.0-3.0	Mn	50-400		
Mg	0.5-1.0	Zn	20-100		
S	0.4-0.7	Mo	no data		

TURNIP GREENS

Survey Average

Macronutrients	%	Micronutrients	ppm
N	3.5-5.0	B	30-60
P	0.35-0.6	Cu	no data
K	3.0-6.0	Fe	no data
Ca	no data	Mn	no data
Mg	no data	Zn	60-80
S	no data	Mo	no data



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VINE CROPS - GENERAL

Survey Average

Macronutrients	%	Micronutrients	ppm
N	4.0-6.5	B	20-70
P	0.3-1.0	Cu	8-20
K	2.0-3.5	Fe	60-400
Ca	2.0-7.0	Mn	30-160
Mg	0.3-0.9	Zn	20-80
S	0.2-0.7	Mo	no data

VINE CROPS - CANTALOUPE

Survey Average

Macronutrients	%	Micronutrients	ppm
N	2.5-3.0	B	30-80
P	0.25-0.5	Cu	no data
K	2.0-3.0	Fe	no data
Ca	2.0-7.0	Mn	no data
Mg	0.9-1.5	Zn	30-50
S	no data	Mo	no data



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VINE CROPS - WATERMELON

Survey Average

Macronutrients	%	Micronutrients	ppm
N	2.0-3.0	B	20-40
P	0.2-0.3	Cu	4-8
K	2.5-3.5	Fe	no data
Ca	2.5-3.5	Mn	no data
Mg	0.6-0.8	Zn	20-50
S	no data	Mo	no data

VINE CROPS - CUCUMBER

Survey Average

Macronutrients	%	Micronutrients	ppm	Nonessential Elements	ppm
N	4.5-6.5	B	25-80	Al	<500
P	0.3-1.0	Cu	7-50		
K	3.0-6.0	Fe	50-300		
Ca	1.3-3.0	Mn	50-300		
Mg	0.3-1.0	Zn	25-250		
S	1.0-2.0	Mo	no data		



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VINE CROPS - WATER CRESS

Survey Average

Macronutrients	%	Micronutrients	ppm
N	4.2-6.0	B	0.25
P	0.8-1.8	Cu	10
K	4-8	Fe	50
Ca	1.2	Mn	50-250
Mg	0.25-0.45	Zn	3
S	no data	Mo	no data