

Technical Note 16 - Supplement Making Fertilizer Recommendations Based on Soil Test High Tunnel Vegetable Production

This supplement reflects soil test recommendations for common crops grown in high tunnels in Alaska. Using soil test results and the specific crop to be grown recommendations can be made for each species being grown under High Tunnel conditions. The document has been formatted with bookmarks to find recommendations for the specific crop being grown.

Adjust nitrogen levels according to soil type, previous management, amount of rainfall, and plant growth. Nitrogen amounts are shown in total pounds N per acre for complete season.

Liming recommendations can be utilized to amend soil pH if pH adjustment is needed.

If manure is used a manure analysis is recommended. Manure analysis is available through the University of Alaska or private labs. Once an analysis has been completed a recommendation can be made to balance crop application rates and nutrients.

Water at time of transplant with an all-soluble, high phosphate plant starter fertilizer, such as 12-48-8, 11-42-17, 10-55-10, 10-52-8, 8-32-16. This is especially important in cold soils and for early plantings.

Apply less nitrogen if vine growth has been excessive in the previous years.

In some cases phosphorus may stimulate plant vigor similar to excess nitrogen.

Limestone quality is important. Limestone recommendations are based on the use of 100% Calcium Carbonate equivalent

limestone. Actual limestone to be applied should be based on the purity of material you are planning to apply.

Limestone requires time to react with soil to effectively change soil pH. It should be applied 6 months to one year ahead of time when desired pH correction is required. Fall is an excellent time to lime.

Lime supplies needed calcium and magnesium in addition to raising pH levels. Do not use high rates of dolomitic limestone unless specifically recommended on vegetable soil test. If no limestone is recommended, but magnesium is required, consider applying Magox (54% Mg) or have dealer formulate required magnesium in fertilizer.

Common scab may cause problems on beets, carrots, daikon radish, radish, rutabaga, turnip roots, and parsnip in addition to Irish potatoes. Excessive use of farm manure can aggravate a scab problem. If manures are used, apply only moderate amounts in the fall to a growing cover crop.

Banded fertilizer is extremely efficient. N rates in the row should be between 50 and 100 lbs/A (1.15 to 2.3 lbs/1000 sq ft). P₂O₅ row-applied rates may be as high as 200 lbs/A (4.6 lbs/1000 sq ft). K₂O rates in the row should not exceed 200 lbs/A (4.6 lbs/1000 sq ft).

The fertilizer recommendations are based on the efficient use of plant nutrients. When soil nutrient levels are high, broadcast applications are not an efficient method of supplying plant nutrient needs. Be sure row applied fertilizer is not in contact with the transplants or potato seed piece.

Soil nutrient levels exceeding crop needs can be as bad as deficient levels. High soil nutrient levels not only might represent an economic loss, but they may also result in crop, animal or environmental problems. Very high P levels (above about 310 lbs P₂O₅/acre or 140 lbs P/acre) in the soil may lead to nutrient deficiencies, especially of iron and zinc. Use best management practices to avoid increasing nutrient levels that exceed crop needs.

Convert lbs/acre to lbs/1000 sq ft by multiplying lbs/acre by 0.023. Convert lbs/acre to lbs/100 sq ft by multiplying by 0.0023.

References:

Everhart, E., Hansen, R., Lewis, D., Naeve, L., and Taber, H. (2010) *Iowa High Tunnel Fruit and Vegetable Production Manual*. Ames, Iowa. (Iowa State University) <https://store.extension.iastate.edu/Product/Iowa-High-Tunnel-Fruit-and-Vegetable-Production-Manual>

Jett, Lewis and Chandran, Rakesh. (2010) *Commercial Vegetable Production*

Recommendations. Morgantown, WV. (West Virginia University) <http://anr.ext.wvu.edu/r/download/62513>

McCrea, Sydney (2005) *Vegetable Fertilizer Guide*. Spokane, Washington. (Washington State University) <http://www.spokane-county.wsu.edu/Spokane/eastside/Fact%20Sheets/C141%20Vegetable%20Fertilizer%20Guide%2005.pdf>

Sanchez, E., Elkner, T., Lamont, W., Demchak, K., Orzolek, M., Gugino, K., Halbrecht, J., Fleischer, S., LaBorde, L., Hoffman, K., and San Julian, G. (2014) *Commercial Vegetable Production Recommendations*. University Park, Pennsylvania. (Pennsylvania State University) <http://agsci.psu.edu/aasl/soil-testing/soil-fertility-testing/handbooks/vegetables>

Spargo, John, Allen, Tracy, and Kariuki, Solomon (2013) *Interpreting Your Soil Test Results*. Amherst, MA. (University of Massachusetts) <http://soiltest.umass.edu/factsheets/interpreting-your-soil-test-results>

MIXED VEGETABLE CROPS Crop Code:3041

Standard Message:

These recommendations are generalized and therefore cannot be as economical, efficient or specific as those given by individual crop. All of the recommendations are given in lb/acre. Divide by 43.5 to convert to lb/1000 sq. ft..

* The nitrogen needed by different crops is as follows:

175 lb/A: Celery

130 lb/A: Beet, Broccoli, Brussels Sprouts, Cabbage, Cauliflower, Collards, Kale, Onions, Popcorn, Scallions, Spinach, Sweet Corn And Tomatoes (fresh Market).

90 lb/A: Asparagus, Carrots, Cucumbers, Eggplant, Endive, Escarole, Gourd, Horseradish, Kohlrabi, Leaf Lettuce, Muskmelon (cantaloupe), Parsnips, Pepper, Processing Tomatoes, Pumpkin, Summer Squash, Turnip Greens And Winter Squash.

45 lb/A: Beans, Head Lettuce, Herbs, Mustard Greens, Peas, Radicchio, Radish, Rutabagas, Sweet Potatoes, Turnip Roots, Tyfon And Watermelon.

Apply all of the above fertilizers just prior to planting and disk in.

Lime and Magnesium Recommendation:

pH Goal: 6.5

Opt soil test Mg (ppm): 100

Nitrogen Recommendation (lb N/A): *

Phosphorus Recommendation
Optimum Soil Test P: 35-70 ppm

Potassium Recommendation
Optimum Soil Test K: 70-140 ppm

<i>ppm P</i>	P2O5 lb/A	P2O5 lb/100 sq ft
0	300	0.69
5	285	0.65
10	270	0.62
15	255	0.59
20	240	0.55
25	225	0.52
30	215	0.49
35	200	0.46
40	190	0.44
45	180	0.41
50	160	0.37
55	140	0.32
60	120	0.28
65	100	0.23
70	95	0.22

<i>ppm K</i>	K2O lb/A)	K2O lb/100 sq ft
0	250	0.57
10	245	0.56
20	240	0.55
30	235	0.54
40	230	0.53
50	225	0.52
60	220	0.51
70	215	0.49
80	210	0.48
90	205	0.47
100	200	0.46
110	185	0.42
120	175	0.40
130	165	0.38
140	150	0.34

HOME POTATO PATCH Crop Code: 1302

Standard Message:

NOTE: If scab is a problem, disregard any limestone recommendation. Apply none at all.

Limestone recommendation, if any, is to bring the soil pH to 6.0. For most other vegetable and agronomic crops, a soil pH of 6.5 is recommended. Multiply the exchangeable acidity by 840 to estimate the lime requirement for pH 6.5.

If limestone is recommended, do not apply more than 3000 pounds per acre of calcium carbonate equivalent the year before planting potatoes. The remainder should be applied after the potato crop has been harvested.

When planting potatoes following a legume or legume grass mix, the amount of N supplied should be factored into a fertilization program. A general rule would be to estimate a minimum of 80 lb of N being supplied by the previous legume or legume/grass mixture. Livestock manure is recommended in moderate amounts. Apply only enough manure to partially supply the crop nutrient needs. Be sure to reduce the amount of fertilizer applied after manure applications. Excessive use of manure may aggravate a common scab problem.

Make adjustments in your plant nutrient needs based on your previous cropping experience. Take into account the variety planted, management practices and the use of the potatoes that are being produced. If vine growth has been excessive in past seasons, reduce N applications. Excess N may improve yield but will often reduce storage life, promote color problems, and reduce specific gravities.

Lime and Magnesium Recommendation:

pH Goal: 6.0

Opt soil test Mg (ppm): 100

Nitrogen Recommendation (lb N/A): 200

Phosphorus and Potassium Recommendations: See page 2

HOME POTATO PATCH Crop Code: 1302

Phosphorus Recommendation

Optimum Soil Test P: 35-55 ppm

<i>ppm P</i>	P2O5 lb/A	P2O5 lb/100 sq ft
0	240	0.55
5	220	0.51
10	200	0.46
15	170	0.39
20	150	0.34
25	125	0.29
30	100	0.23
35	80	0.18
40	60	0.14
45	50	0.11
50	50	0.11
55	50	0.11
60	50	0.11
65	50	0.11
70	50	0.11
75	50	0.11
80	50	0.11
85	50	0.11
90	50	0.11
95	50	0.11
100	50	0.11
105	50	0.11
110	50	0.11
115	50	0.11
120	50	0.11
125	50	0.11
130	50	0.11
135	50	0.11
140	50	0.11
145	50	0.11
150	50	0.11
155	50	0.11
160	50	0.11
165	50	0.11
170	50	0.11
175	50	0.11

Potassium Recommendation

Optimum Soil Test K: 100-200 ppm

<i>ppm K</i>	K2O lb/A)	K2O lb/100 sq ft
0	430	0.99
10	430	0.99
20	420	0.96
30	400	0.92
40	375	0.86
50	350	0.80
60	325	0.75
70	300	0.69
80	280	0.64
90	260	0.60
100	240	0.55
110	220	0.51
120	190	0.44
130	175	0.40
140	140	0.32
150	120	0.28
160	100	0.23
170	75	0.17
180	50	0.11
190	50	0.11
200	50	0.11
210	50	0.11
220	50	0.11
230	50	0.11
240	50	0.11
250	50	0.11
260	50	0.11
270	50	0.11
280	50	0.11
290	50	0.11
300	50	0.11

ASPARAGUS (MAINTAIN) Crop Code:3002

Standard Message:

Apply fertilizer in March before the cutting season begins and incorporate into less than 2 inches of soil. Sidedress 25-50-50 pounds per acre of nitrogen-phosphate-potash after the last cutting to maintain good fern growth (5 to 6 feet tall).

Lime and Magnesium Recommendation:

pH Goal: 6.5

Opt soil test Mg (ppm): 100

Nitrogen Recommendation (lb N/A): 75

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	285
5	300
10	265
15	245
20	225
25	200
30	175
35	150
40	145
45	135
50	120
55	105
60	90
65	75
70	75

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	225
10	215
20	205
30	195
40	185
50	175
60	165
70	150
80	140
90	130
100	120
110	100
120	80
130	60
140	50

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

BEETS Crop Code:3003

Standard Message:

Broadcast one-half of the fertilizer and disk in. Apply the remainder in bands 2 inches below seed and 2 inches to the side.

Lime and Magnesium Recommendation:

pH Goal: 6.5

Opt soil test Mg (ppm): 120

Nitrogen Recommendation (lb N/A): 100

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	300
5	285
10	270
15	255
20	240
25	225
30	215
35	200
40	190
45	180
50	160
55	140
60	120
65	100
70	95

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	300
10	290
20	280
30	270
40	260
50	250
60	240
70	230
80	220
90	210
100	200
110	175
120	150
130	125
140	100

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

BROCCOLI Crop Code:3004

Standard Message:

Broadcast one-half to three-fourths of fertilizer and disk in. Apply remainder in bands 4 inches deep and 3 to 4 inches from the row at time of planting.

Lime and Magnesium Recommendation:

pH Goal: 7.0

Opt soil test Mg (ppm): 120

Nitrogen Recommendation (lb N/A): 100

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	300
5	285
10	270
15	260
20	250
25	235
30	220
35	200
40	180
45	160
50	145
55	130
60	115
65	100
70	95

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	250
10	245
20	240
30	235
40	230
50	225
60	220
70	215
80	210
90	205
100	200
110	185
120	175
130	165
140	150

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

BRUSSELS SPROUTS Crop Code:3005

Standard Message:

Broadcast one-half to three-fourths of the fertilizer and disk in. Apply remainder in bands 4 inches deep and 3 to 4 inches from the row at time of planting. Additional nitrogen should not be needed.

Lime and Magnesium Recommendation:

pH Goal: 6.5

Opt soil test Mg (ppm): 100

Nitrogen Recommendation (lb N/A): 100

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	300
5	285
10	270
15	260
20	250
25	235
30	220
35	200
40	180
45	160
50	145
55	130
60	115
65	100
70	95

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	250
10	245
20	240
30	235
40	230
50	225
60	220
70	215
80	210
90	205
100	200
110	185
120	175
130	165
140	150

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

FRESH MARKET CABBAGE Crop Code:3105

Standard Message:

Broadcast one-half to three-fourths of fertilizer and disk in. For transplants apply the remainder in bands 4 inches deep and 3 to 4 inches from the row. For direct seeding apply the remainder in bands 2 inches below seed and 2 inches to the side.

Lime and Magnesium Recommendation:

pH Goal: 6.5

Opt soil test Mg (ppm): 120

Nitrogen Recommendation (lb N/A): 100

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	300
5	285
10	270
15	260
20	250
25	240
30	230
35	225
40	215
45	200
50	175
55	150
60	125
65	100
70	95

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	300
10	290
20	280
30	270
40	260
50	250
60	240
70	230
80	220
90	210
100	200
110	175
120	150
130	125
140	100

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

Standard Message:

Broadcast and disk in fertilizer. Up to 25 pounds per acre of additional nitrogen may be needed 6 to 8 weeks after seeding.

Lime and Magnesium Recommendation:

pH Goal: 6.5

Opt soil test Mg (ppm): 100

Nitrogen Recommendation (lb N/A): 75

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	300
5	285
10	265
15	245
20	225
25	200
30	175
35	150
40	145
45	135
50	120
55	105
60	90
65	75
70	75

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	225
10	215
20	205
30	195
40	185
50	175
60	165
70	150
80	140
90	130
100	120
110	100
120	80
130	60
140	50

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

CAULIFLOWER Crop Code:3006

Standard Message:

Broadcast one-half to three-fourths of the fertilizer and disk in. Apply the remainder in bands 4 inches deep and 3 to 4 inches from the row at time of planting. Sidedress with up to 20 pounds per acre of nitrogen about 3 weeks after planting. Sidedress with up to another 20 pounds per acre of nitrogen when curds reach silver-dollar size.

Lime and Magnesium Recommendation:

pH Goal: 6.5

Opt soil test Mg (ppm): 120

Nitrogen Recommendation (lb N/A): 100

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	300
5	285
10	270
15	260
20	250
25	235
30	220
35	200
40	180
45	160
50	145
55	130
60	115
65	100
70	95

Soil test K (ppm)	K ₂ O lb/A
0	250
10	245
20	240
30	235
40	230
50	225
60	220
70	215
80	210
90	205
100	200
110	185
120	175
130	165
140	150

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

CHINESE CABBAGE Crop Code:3008

Standard Message:

Broadcast and disk in fertilizer prior to planting.

Lime and Magnesium Recommendation:

pH Goal: 6.5

Opt soil test Mg (ppm): 120

Nitrogen Recommendation (lb N/A): 75

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	300
5	285
10	265
15	245
20	225
25	200
30	175
35	150
40	145
45	135
50	120
55	105
60	90
65	75
70	75

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	225
10	215
20	205
30	195
40	185
50	175
60	165
70	150
80	140
90	130
100	120
110	100
120	80
130	60
140	50

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

CELERY Crop Code:3007

Standard Message:

Broadcast one-half of the fertilizer and disk in. Sidedress the remainder 3 weeks after planting. Sidedress with up to 40 pounds per acre of nitrogen 6 weeks after planting. Repeat nitrogen sidedress 9 to 10 weeks after planting. Blackheart of celery in Pennsylvania appears to be caused by insufficient available calcium for the plant either because of calcium deficiency or extremely high levels of potassium in the soil. A combination of these two could also be responsible. The more available the soil calcium is the higher the potassium can be.

Lime and Magnesium Recommendation:

pH Goal: 6.5

Opt soil test Mg (ppm): 120

Nitrogen Recommendation (lb N/A): 100

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	300
5	285
10	270
15	260
20	250
25	240
30	230
35	225
40	215
45	200
50	175
55	150
60	125
65	100
70	95

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	300
10	290
20	280
30	270
40	260
50	250
60	240
70	230
80	220
90	210
100	200
110	175
120	150
130	125
140	100

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

Standard Message:

Broadcast one-half to three-fourths of the fertilizer and disk in. apply remainder in bands 4 inches deep and 3 to 4 inches from the row at time of planting. Additional nitrogen should not be needed.

Lime and Magnesium Recommendation:

pH Goal: 6.5

Opt soil test Mg (ppm): 100

Nitrogen Recommendation (lb N/A): 100

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	300
5	285
10	270
15	260
20	250
25	235
30	220
35	200
40	180
45	160
50	145
55	130
60	115
65	100
70	95

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	250
10	245
20	240
30	235
40	230
50	225
60	220
70	215
80	210
90	205
100	200
110	185
120	175
130	165
140	150

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

CUCUMBERS (PICKLERS) Crop Code:3109

Standard Message:

Broadcast half of the fertilizer and disk in. Apply the remainder in bands 2 inches below the seed and 2 to 3 inches to the side of the row: or broadcast and disk in. Up to 30 lb/acre of additional N may be needed when vines begin to spread to maintain plant vigor.

Lime and Magnesium Recommendation:

pH Goal: 6.5

Opt soil test Mg (ppm): 100

Nitrogen Recommendation (lb N/A): 75

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	300
5	285
10	265
15	245
20	225
25	200
30	175
35	150
40	145
45	135
50	120
55	105
60	90
65	75
70	75

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	225
10	215
20	205
30	195
40	185
50	175
60	165
70	150
80	140
90	130
100	120
110	100
120	80
130	60
140	50

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

CUCUMBERS (SLICERS) Crop Code:3009

Standard Message:

Broadcast half of the fertilizer and disk in. Apply the remainder in bands 2 inches below seed or root ball and 2 to 3 inches to the side of the seed or transplants. Where plastic mulch is used, incorporate fertilizer about 4 to 5 inches deep under the plastic while laying the mulch. Up to 30 pounds per acre of additional nitrogen may be needed when vines begin to spread to maintain plant vigor.

Lime and Magnesium Recommendation:

pH Goal: 6.5

Opt soil test Mg (ppm): 100

Nitrogen Recommendation (lb N/A): 75

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	300
5	285
10	265
15	245
20	225
25	200
30	175
35	150
40	145
45	135
50	120
55	105
60	90
65	75
70	75

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	225
10	215
20	205
30	195
40	185
50	175
60	165
70	150
80	140
90	130
100	120
110	100
120	80
130	60
140	50

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

Standard Message:

Broadcast fertilizer and disk in. Sidedress with 15-30-15 pounds per acre of nitrogen-phosphate-potash about 3 to 4 weeks after seeding.

Lime and Magnesium Recommendation:

pH Goal: 6.5

Opt soil test Mg (ppm): 100

Nitrogen Recommendation (lb N/A): 35

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	210
5	205
10	195
15	185
20	175
25	165
30	155
35	140
40	135
45	130
50	125
55	120
60	110
65	105
70	105

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	210
10	205
20	200
30	195
40	190
50	185
60	175
70	165
80	155
90	150
100	140
110	120
120	100
130	80
140	70

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

Standard Message:

Incorporate fertilizer about 4 to 5 inches deep under the plastic mulch before or while laying the mulch or apply in bands 4 inches deep and 3 to 4 inches from either side of transplants at planting time. Sidedress 3 to 4 weeks after planting with 25-50-50 pounds per acre of nitrogen-phosphate-potash and at 6 to 8 weeks with 25 pounds per acre of nitrogen.

Lime and Magnesium Recommendation:

pH Goal: 6.5

Opt soil test Mg (ppm): 100

Nitrogen Recommendation (lb N/A): 75

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	300
5	285
10	265
15	245
20	225
25	200
30	175
35	150
40	145
45	135
50	120
55	105
60	90
65	75
70	75

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	225
10	215
20	205
30	195
40	185
50	175
60	165
70	150
80	140
90	130
100	120
110	100
120	80
130	60
140	75

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

ENDIVE Crop Code:3012

Standard Message:

Broadcast and disk in fertilizer. Sidedress with 25 pounds per acre of nitrogen 3 to 5 weeks after planting.

Lime and Magnesium Recommendation:

pH Goal: 6.0

Opt soil test Mg (ppm): 100

Nitrogen Recommendation (lb N/A): 75

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	300
5	285
10	265
15	245
20	225
25	200
30	175
35	150
40	145
45	135
50	120
55	105
60	90
65	75
70	75

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	225
10	215
20	205
30	195
40	185
50	175
60	165
70	150
80	140
90	130
100	120
110	100
120	80
130	60
140	50

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

ESCAROLE Crop Code:3013

Standard Message:

Broadcast and disk in fertilizer. Sidedress with 25 pounds per acre of nitrogen 3 to 5 weeks after planting.

Lime and Magnesium Recommendation:

pH Goal: 6.0

Opt soil test Mg (ppm): 100

Nitrogen Recommendation (lb N/A): 75

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	300
5	285
10	265
15	245
20	225
25	200
30	175
35	150
40	145
45	135
50	120
55	105
60	90
65	75
70	75

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	225
10	215
20	205
30	195
40	185
50	175
60	165
70	150
80	140
90	130
100	120
110	100
120	80
130	60
140	50

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

GARLIC Crop Code:3014

Standard Message:

Broadcast fertilizer and disk about 6 inches deep before planting in the fall. When plants are approximately 6 inches tall (about March 15), topdress with 25-25-25 pounds per acre of nitrogen-phosphate-potash. Topdress with about 25 pounds per acre of nitrogen around about 4 weeks after planting/or green up. Apply all topdressings to dry plants at midday to reduce change of fertilizer burn. Consider using Ammonium Sulfate for this last (May 1) topdressing, since sulfur may enhance pungency.

Lime and Magnesium Recommendation:

pH Goal: 6.5

Opt soil test Mg (ppm): 100

Nitrogen Recommendation (lb N/A): 75

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	300
5	285
10	265
15	245
20	225
25	200
30	175
35	150
40	145
45	135
50	120
55	105
60	90
65	75
70	75

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	225
10	215
20	205
30	195
40	185
50	175
60	165
70	150
80	140
90	130
100	120
110	100
120	80
130	60
140	50

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

GOURD Crop Code:3015

Standard Message:

Broadcast half the fertilizer and disk in. Apply remainder in bands 2 inches below seed and 2 to 3 inches to the side of row. If magnesium deficiency symptoms appear after vining, apply a foliar spray of 6 pounds of magnesium sulfate per 100 gallons of water per acre. Repeat in 10 days if needed.

Lime and Magnesium Recommendation:

pH Goal: 6.5

Opt soil test Mg (ppm): 100

Nitrogen Recommendation (lb N/A): 75

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	300
5	285
10	265
15	245
20	225
25	200
30	175
35	150
40	145
45	135
50	120
55	105
60	90
65	75
70	75

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	225
10	215
20	205
30	195
40	185
50	175
60	165
70	150
80	140
90	130
100	120
110	100
120	80
130	60
140	50

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

Standard Message:

Apply the above rate of fertilizer in early spring. Sidedress chervil fennel, lovage, parsley, and summer savory with 35 pounds per acre of additional nitrogen about 4 to 5 weeks later.

Lime and Magnesium Recommendation:

pH Goal: 6.5

Opt soil test Mg (ppm): 100

Nitrogen Recommendation (lb N/A): 35

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	210
5	205
10	195
15	185
20	175
25	165
30	155
35	140
40	135
45	130
50	125
55	120
60	110
65	105
70	105

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	210
10	205
20	200
30	195
40	190
50	185
60	175
70	165
80	155
90	150
100	140
110	120
120	100
130	80
140	70

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

HORSERADISH Crop Code:3110

Standard Message:

Broadcast and disk in recommended quantities of fertilizer before planting. Sidedress an additional 25 lb/acre of N 3 to 5 weeks after planting and another 20 lb/acre N late in season.

Lime and Magnesium Recommendation:

pH Goal: 6.5

Opt soil test Mg (ppm): 100

Nitrogen Recommendation (lb N/A): 75

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	300
5	285
10	265
15	245
20	225
25	200
30	175
35	150
40	145
45	135
50	120
55	105
60	90
65	75
70	75

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	225
10	215
20	205
30	195
40	185
50	175
60	165
70	150
80	140
90	130
100	120
110	100
120	80
130	60
140	50

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

KALE Crop Code:3111

Standard Message:

Broadcast fertilizer and disk in.

Lime and Magnesium Recommendation:

pH Goal: 6.5

Opt soil test Mg (ppm): 100

Nitrogen Recommendation (lb N/A): 75

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	300
5	285
10	265
15	245
20	225
25	200
30	175
35	150
40	145
45	135
50	120
55	105
60	90
65	75
70	75

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	225
10	215
20	205
30	195
40	185
50	175
60	165
70	150
80	140
90	130
100	120
110	100
120	80
130	60
140	50

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

Standard Message:

Broadcast fertilizer and disk in.

Lime and Magnesium Recommendation:

pH Goal: 6.5

Opt soil test Mg (ppm): 100

Nitrogen Recommendation (lb N/A): 75

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	300
5	285
10	265
15	245
20	225
25	200
30	175
35	150
40	145
45	135
50	120
55	105
60	90
65	75
70	75

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	225
10	215
20	205
30	195
40	185
50	175
60	165
70	150
80	140
90	130
100	120
110	100
120	80
130	60
140	50

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

Standard Message:

Broadcast fertilizer and disk in. About 8 weeks after transplanting sidedress with 25-50-50 pounds per acre of nitrogen-phosphate-potash.

Lime and Magnesium Recommendation:

pH Goal: 6.5

Opt soil test Mg (ppm): 120

Nitrogen Recommendation (lb N/A): 100

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	300
5	285
10	270
15	260
20	250
25	235
30	220
35	200
40	180
45	160
50	145
55	130
60	115
65	100
70	95

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	250
10	245
20	240
30	235
40	230
50	225
60	220
70	215
80	210
90	205
100	200
110	185
120	175
130	165
140	150

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

HEAD LETTUCE Crop Code:3019

Standard Message:

Broadcast and disk in fertilizer prior to setting transplants. Sidedress with up to 15 pounds per acre of nitrogen 4 weeks after planting.

Lime and Magnesium Recommendation:

pH Goal: 6.5

Opt soil test Mg (ppm): 120

Nitrogen Recommendation (lb N/A): 35

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	210
5	205
10	195
15	185
20	175
25	165
30	155
35	140
40	135
45	130
50	125
55	120
60	110
65	105
70	105

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	210
10	205
20	200
30	195
40	190
50	185
60	175
70	165
80	155
90	150
100	140
110	120
120	100
130	80
140	70

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

LEAF LETTUCE Crop Code:3020

Standard Message:

Broadcast and disk in fertilizer prior to planting.

Lime and Magnesium Recommendation:

pH Goal: 6.5

Opt soil test Mg (ppm): 120

Nitrogen Recommendation (lb N/A): 75

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	300
5	285
10	265
15	245
20	225
25	200
30	175
35	150
40	145
45	135
50	120
55	105
60	90
65	75
70	75

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	225
10	215
20	205
30	195
40	185
50	175
60	165
70	150
80	140
90	130
100	120
110	100
120	80
130	60
140	50

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

MIXED VEGETABLE CROPS Crop Code:3041

Standard Message:

These recommendations are generalized and therefore cannot be as economical, efficient or specific as those given by individual crop. All of the recommendations are given in lb/acre. Divide by 43.5 to convert to lb/1000 sq. ft..

* The nitrogen needed by different crops is as follows:

175 lb/A: Celery

130 lb/A: Beet, Broccoli, Brussels Sprouts, Cabbage, Cauliflower, Collards, Kale, Onions, Popcorn, Scallions, Spinach, Sweet Corn And Tomatoes (fresh Market).

90 lb/A: Asparagus, Carrots, Cucumbers, Eggplant, Endive, Escarole, Gourd, Horseradish, Kohlrabi, Leaf Lettuce, Muskmelon (cantaloupe), Parsnips, Pepper, Processing Tomatoes, Pumpkin, Summer Squash, Turnip Greens And Winter Squash.

45 lb/A: Beans, Head Lettuce, Herbs, Mustard Greens, Peas, Radicchio, Radish, Rutabagas, Sweet Potatoes, Turnip Roots, Tyfon And Watermelon.

Apply all of the above fertilizers just prior to planting and disk in.

Lime and Magnesium Recommendation:

pH Goal: 6.5

Opt soil test Mg (ppm): 100

Nitrogen Recommendation (lb N/A): *

Phosphorus Recommendation (lb P2O5/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P2O5 lb/A
0	300
5	285
10	270
15	255
20	240
25	225
30	215
35	200
40	190
45	180
50	160
55	140
60	120
65	100
70	95

Potassium Recommendation (lb K2O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K2O lb/A
0	250
10	245
20	240
30	235
40	230
50	225
60	220
70	215
80	210
90	205
100	200
110	185
120	175
130	165
140	150

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

MUSTARD GREENS Crop Code:3113

Standard Message:

Broadcast fertilizer and disk in. Sidedress with 30 pounds per acre of nitrogen in the later stages of crop development.

Lime and Magnesium Recommendation:

pH Goal: 6.5

Opt soil test Mg (ppm): 100

Nitrogen Recommendation (lb N/A): 35

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	210
5	205
10	195
15	185
20	175
25	165
30	155
35	140
40	135
45	130
50	125
55	120
60	110
65	105
70	105

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	210
10	205
20	200
30	195
40	190
50	185
60	175
70	165
80	155
90	150
100	140
110	120
120	100
130	80
140	70

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

Standard Message:

Broadcast up to three-fourths of the fertilizer and disk in. Sidedress the remainder 4 to 5 weeks after planting. Up to 20 pounds per acre of additional nitrogen may be needed on Sweet Spanish types about 9 weeks after planting. Any stunting or stress on Sweet Spanish types makes them pungent.

Lime and Magnesium Recommendation:

pH Goal: 7.0

Opt soil test Mg (ppm): 120

Nitrogen Recommendation (lb N/A): 100

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	300
5	285
10	270
15	255
20	240
25	225
30	215
35	200
40	190
45	180
50	160
55	140
60	120
65	100
70	95

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	300
10	290
20	280
30	270
40	260
50	250
60	240
70	230
80	220
90	210
100	200
110	175
120	150
130	125
140	100

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

Standard Message:

Broadcast and disk in fertilizer. Up to 25 pounds per acre of additional nitrogen may be needed 6 to 8 weeks after seeding.

Lime and Magnesium Recommendation:

pH Goal: 6.5

Opt soil test Mg (ppm): 120

Nitrogen Recommendation (lb N/A): 75

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	300
5	285
10	265
15	245
20	225
25	200
30	175
35	150
40	145
45	135
50	120
55	105
60	90
65	75
70	75

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	225
10	215
20	205
30	195
40	185
50	175
60	165
70	150
80	140
90	130
100	120
110	100
120	80
130	60
140	50

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

HOT PEPPERS (FRESH MARKET) Crop Code:3025

Standard Message:

Incorporate fertilizer about 4 to 5 inches deep under the plastic mulch before or while laying the mulch. Sidedress with 10 to 15 pounds per acre of nitrogen about 2 to 3 weeks after good fruit set.

Lime and Magnesium Recommendation:

pH Goal: 7.0

Opt soil test Mg (ppm): 120

Nitrogen Recommendation (lb N/A): 75

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	300
5	285
10	265
15	245
20	225
25	200
30	175
35	150
40	145
45	135
50	120
55	105
60	90
65	75
70	75

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	225
10	215
20	205
30	195
40	185
50	175
60	165
70	150
80	140
90	130
100	120
110	100
120	80
130	60
140	50

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

SWEET-FRESH MARKET PEPPERS Crop Code:3026

Standard Message:

Incorporate fertilizer about 4 to 5 inches deep under the plastic mulch before or while laying the mulch. Sidedress with 15-30-15 pounds per acre of nitrogen-phosphate-potash about 2 to 3 weeks after good fruit set.

Lime and Magnesium Recommendation:

pH Goal: 7.0

Opt soil test Mg (ppm): 120

Nitrogen Recommendation (lb N/A): 75

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	300
5	285
10	265
15	245
20	225
25	200
30	175
35	150
40	145
45	135
50	120
55	105
60	90
65	75
70	75

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	225
10	215
20	205
30	195
40	185
50	175
60	165
70	150
80	140
90	130
100	120
110	100
120	80
130	60
140	50

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

HOME POTATO PATCH Crop Code: 1302

Standard Message:

NOTE: If scab is a problem, disregard any limestone recommendation. Apply none at all.

Limestone recommendation, if any, is to bring the soil pH to 6.0. For most other vegetable and agronomic crops, a soil pH of 6.5 is recommended. Multiply the exchangeable acidity by 840 to estimate the lime requirement for pH 6.5.

If limestone is recommended, do not apply more than 3000 pounds per acre of calcium carbonate equivalent the year before planting potatoes. The remainder should be applied after the potato crop has been harvested.

When planting potatoes following a legume or legume grass mix, the amount of N supplied should be factored into a fertilization program. A general rule would be to estimate a minimum of 80 lb of N being supplied by the previous legume or legume/grass mixture. Livestock manure is recommended in moderate amounts. Apply only enough manure to partially supply the crop nutrient needs. Be sure to reduce the amount of fertilizer applied after manure applications. Excessive use of manure may aggravate a common scab problem.

Make adjustments in your plant nutrient needs based on your previous cropping experience. Take into account the variety planted, management practices and the use of the potatoes that are being produced. If vine growth has been excessive in past seasons, reduce N applications. Excess N may improve yield but will often reduce storage life, promote color problems, and reduce specific gravities.

Lime and Magnesium Recommendation:

pH Goal: 6.0

Opt soil test Mg (ppm): 100

Nitrogen Recommendation (lb N/A): 200

Phosphorus and Potassium Recommendations: See page 2

HOME POTATO PATCH Crop Code: 1302

Phosphorus Recommendation (lb P2O5/A):

(Optimum soil test P: 35 -55 ppm)

Soil test P (ppm)	P2O5 lb/A
0	240
5	220
10	200
15	170
20	150
25	125
30	100
35	80
40	60
45	50
50	50
55	50
60	50
65	50
70	50
75	50
80	50
85	50
90	50
95	50
100	50
105	50
110	50
115	50
120	50
125	50
130	50
135	50
140	50
145	50
150	50
155	50
160	50
165	50
170	50
175	50

Potassium Recommendation (lb K2O/A):

(Optimum soil test K: 100 - 200 ppm)

Soil test K (ppm)	K2O lb/A
0	430
10	430
20	420
30	400
40	375
50	350
60	325
70	300
80	280
90	260
100	240
110	220
120	190
130	175
140	140
150	120
160	100
170	75
180	50
190	50
200	50
210	50
220	50
230	50
240	50
250	50
260	50
270	50
280	50
290	50
300	50

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

PUMPKIN Crop Code:3027

Standard Message:

Broadcast half the fertilizer and disk in. Apply remainder in bands 2 inches below seed and 2 to 3 inches to the side of row. If magnesium deficiency symptoms appear after vining, apply a foliar spray of 6 pounds of magnesium sulfate per 100 gallons of water per acre. Repeat in 10 days if needed.

Lime and Magnesium Recommendation:

pH Goal: 6.5

Opt soil test Mg (ppm): 100

Nitrogen Recommendation (lb N/A): 75

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	300
5	285
10	265
15	245
20	225
25	200
30	175
35	150
40	145
45	135
50	120
55	105
60	90
65	75
70	75

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	225
10	215
20	205
30	195
40	185
50	175
60	165
70	150
80	140
90	130
100	120
110	100
120	80
130	60
140	50

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

Standard Message:

Broadcast and disk in fertilizer prior to setting transplants. Sidedress with up to 15 pounds per acre of nitrogen 4 weeks after planting.

Lime and Magnesium Recommendation:

pH Goal: 6.0

Opt soil test Mg (ppm): 100

Nitrogen Recommendation (lb N/A): 35

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	210
5	205
10	195
15	185
20	175
25	165
30	155
35	140
40	135
45	130
50	125
55	120
60	110
65	105
70	105

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	210
10	205
20	200
30	195
40	190
50	185
60	175
70	165
80	155
90	150
100	140
110	120
120	100
130	80
140	70

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

RADISH Crop Code:3029

Standard Message:

Broadcast fertilizer and disk in.

Lime and Magnesium Recommendation:

pH Goal: 6.5

Opt soil test Mg (ppm): 100

Nitrogen Recommendation (lb N/A): 35

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	210
5	205
10	195
15	185
20	175
25	165
30	155
35	140
40	135
45	130
50	125
55	120
60	110
65	105
70	105

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	210
10	205
20	200
30	195
40	190
50	185
60	175
70	165
80	155
90	150
100	140
110	120
120	100
130	80
140	70

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

RUTABAGA Crop Code:3030

Standard Message:

Broadcast fertilizer and disk in. Sidedress with 20 to 25 pounds per acre of nitrogen when plants are 4 to 6 inches tall.

Lime and Magnesium Recommendation:

pH Goal: 6.5

Opt soil test Mg (ppm): 100

Nitrogen Recommendation (lb N/A): 35

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	210
5	205
10	195
15	185
20	175
25	165
30	155
35	140
40	135
45	130
50	125
55	120
60	110
65	105
70	105

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	210
10	205
20	200
30	195
40	190
50	185
60	175
70	165
80	155
90	150
100	140
110	120
120	100
130	80
140	70

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

SCALLIONS Crop Code:3031

Standard Message:

Broadcast up to three-fourths of the fertilizer and disk in. Sidedress the remainder 4 to 5 weeks after seeding. Up to 35 pounds per acre of nitrogen may be needed 3 to 4 weeks before harvest.

Lime and Magnesium Recommendation:

pH Goal: 6.0

Opt soil test Mg (ppm): 100

Nitrogen Recommendation (lb N/A): 100

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	300
5	285
10	270
15	260
20	250
25	240
30	230
35	225
40	215
45	200
50	175
55	150
60	125
65	100
70	95

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	300
10	290
20	280
30	270
40	260
50	250
60	240
70	230
80	220
90	210
100	200
110	175
120	150
130	125
140	100

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

SPINACH Crop Code:3118

Standard Message:

Broadcast one-half of the fertilizer and disk in. Top-dress or side-dress remaining fertilizer when plants have 4 true leaves. When spinach is double-cropped or follows a heavily fertilized crop, less nitrogen may be desirable. If spinach is to be overwintered, split the above top-dress or side-dress fertilizer rate so that half of this is applied in the fall and the other half, the next spring.

Lime and Magnesium Recommendation:

pH Goal: 6.5

Opt soil test Mg (ppm): 120

Nitrogen Recommendation (lb N/A): 100

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	300
5	285
10	270
15	260
20	250
25	240
30	230
35	225
40	215
45	200
50	175
55	150
60	125
65	100
70	95

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	300
10	290
20	280
30	270
40	260
50	250
60	240
70	230
80	220
90	210
100	200
110	175
120	150
130	125
140	100

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

SUMMER SQUASH Crop Code:3032

Standard Message:

Broadcast half of the fertilizer and disk in. Apply the remainder in bands 2 inches below seed or root ball and 2 to 3 inches to the side of the seed or transplants. Where plastic mulch is used, incorporate fertilizer about 4 to 5 inches deep under the plastic while laying the mulch. Up to 30 pounds per acre of additional nitrogen may be needed when vines begin to spread to maintain plant vigor.

Lime and Magnesium Recommendation:

pH Goal: 6.5

Opt soil test Mg (ppm): 100

Nitrogen Recommendation (lb N/A): 75

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	300
5	285
10	265
15	245
20	225
25	200
30	175
35	150
40	145
45	135
50	120
55	105
60	90
65	75
70	75

Soil test K (ppm)	K ₂ O lb/A
0	225
10	215
20	205
30	195
40	185
50	175
60	165
70	150
80	140
90	130
100	120
110	100
120	80
130	60
140	50

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

WINTER SQUASH (FRESH MARKET) Crop Code:3033

Standard Message:

Broadcast half the fertilizer and disk in. Apply remainder in bands 2 inches below seed and 2 to 3 inches to the side of row. If magnesium deficiency symptoms appear after vining, apply a foliar spray of 6 pounds of magnesium sulfate per 100 gallons of water per acre. Repeat in 10 days if needed.

Lime and Magnesium Recommendation:

pH Goal: 6.5

Opt soil test Mg (ppm): 100

Nitrogen Recommendation (lb N/A): 75

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	300
5	285
10	265
15	245
20	225
25	200
30	175
35	150
40	145
45	135
50	120
55	105
60	90
65	75
70	75

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	225
10	215
20	205
30	195
40	185
50	175
60	165
70	150
80	140
90	130
100	120
110	100
120	80
130	60
140	50

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

SWEET CORN (FRESH MARKET) Crop Code:3034

Standard Message:

Apply above fertilizer in bands 2 inches to the side and 2 inches below the seed. Double the above amounts of nitrogen-phosphate-potash if you wish to broadcast the fertilizer. To maintain good husk and flag-leaf color, sidedress with 30 lb/acre of nitrogen when corn is 12 to 18 inches tall.

For early plantings in cool soils, apply 50 lb/A of 0-20-0 or 25 lb/A of 0-46-0 down the spout with the seed.

Lime and Magnesium Recommendation:

pH Goal: 6.5

Opt soil test Mg (ppm): 100

Nitrogen Recommendation (lb N/A): 50

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	75
5	75
10	70
15	65
20	60
25	55
30	50
35	45
40	45
45	40
50	40
55	35
60	35
65	30
70	30

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	35
10	35
20	35
30	30
40	30
50	30
60	25
70	20
80	20
90	15
100	15
110	10
120	10
140	0

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

FRESH MARKET TOMATO (PINK RIPES) Crop Code:3036

Standard Message:

Band the full amount recommended 4 inches below and 4 inches to either side of the transplants at planting time. If broadcast application of fertilizer is used, then double the amounts of plant nutrients recommended above and disk in before transplanting.

Lime and Magnesium Recommendation:

pH Goal: 7.0

Opt soil test Mg (ppm): 100

Nitrogen Recommendation (lb N/A): 50

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	150
5	140
10	130
15	125
20	120
25	115
30	110
35	100
40	90
45	80
50	75
55	70
60	65
65	60
70	60

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	150
10	150
20	150
30	145
40	140
50	135
60	135
70	135
80	130
90	125
100	120
110	115
120	110
130	105
140	100

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

TURNIP GREENS Crop Code:3123

Standard Message:

Broadcast and disk in fertilizer. Top-dress with 15 to 20 pounds per acre of nitrogen immediately after first cutting.

Lime and Magnesium Recommendation:

pH Goal: 6.5

Opt soil test Mg (ppm): 120

Nitrogen Recommendation (lb N/A): 75

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	300
5	285
10	265
15	245
20	225
25	200
30	175
35	150
40	145
45	135
50	120
55	105
60	90
65	75
70	75

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	225
10	215
20	205
30	195
40	185
50	175
60	165
70	150
80	140
90	130
100	120
110	100
120	80
130	60
140	50

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023

TURNIP ROOTS Crop Code:3038

Standard Message:

Broadcast fertilizer and disk in. When turnips follow a heavily fertilized crop in the rotation, little or no nitrogen may be needed.

Lime and Magnesium Recommendation:

pH Goal: 6.5

Opt soil test Mg (ppm): 100

Nitrogen Recommendation (lb N/A): 35

Phosphorus Recommendation (lb P₂O₅/A):

(Optimum soil test P: 35 -70 ppm)

Soil test P (ppm)	P ₂ O ₅ lb/A
0	210
5	205
10	195
15	185
20	175
25	165
30	155
35	140
40	135
45	130
50	125
55	120
60	110
65	105
70	105

Potassium Recommendation (lb K₂O/A):

(Optimum soil test K: 70 - 140 ppm)

Soil test K (ppm)	K ₂ O lb/A
0	210
10	205
20	200
30	195
40	190
50	185
60	175
70	165
80	155
90	150
100	140
110	120
120	100
130	80
140	70

To convert lbs per acre to lbs per 1000 square feet multiply rate by 0.023

To convert lbs per acre to lbs per 100 square feet multiply rate by 0.0023