

Plant Tissue Sufficiency Ranges

			Corn				
			< 12"	12" - tassel	Tassel	Brown Silk	Mature
N	nitrogen	%	3.5 - 5	3 - 4	2.9 - 4	2.5 - 3.5	2.5 - 3.5
P	phosphorus	%	.35 - .8	.3 - .5	.25 - .5	.25 - .4	.25 - .4
K	potassium	%	3 - 5	2 - 3	1.8 - 2.8	1.8 - 2.5	1.6 - 2.5
S	sulfur	%	.18 - .5	.16 - .5	.16 - .5	.16 - .5	.12 - .4
Ca	calcium	%	.3 - 1.6	.3 - .8	.25 - .6	.2 - 1.2	.2 - .8
Mg	magnesium	%	.21 - .8	.16 - .6	.16 - .4	.12 - .5	.12 - .5
Na	sodium	%	0 - .1	0 - .1	0 - .1	0 - .1	0 - .1
Zn	zinc	ppm	20 - 75	20 - 75	19 - 75	16 - 50	16 - 50
Fe	iron	ppm	50 - 300	50 - 250	50 - 250	30 - 250	30 - 250
Mn	manganese	ppm	50 - 160	18 - 150	18 - 150	15 - 150	15 - 150
Cu	copper	ppm	6 - 20	5 - 15	5 - 15	4 - 20	4 - 20
B	boron	ppm	6 - 25	5 - 25	5 - 25	4 - 20	3 - 20

			Small Grains				Soybean
			Tillering	Boot	Heading (Flag)	Heading (Whole)	All stages
N	nitrogen	%	3.8 - 5.5	3.8 - 5	3.6 - 4.5	2.5 - 3.5	4 - 5.5
P	phosphorus	%	.3 - .5	.3 - .5	.3 - .5	.2 - .4	.26 - .5
K	potassium	%	2.5 - 3.5	2 - 3.5	2 - 3	1.8 - 3	1.7 - 2.5
S	sulfur	%	.2 - .5	.2 - .5	.2 - .5	.15 - .4	.2 - .6
Ca	calcium	%	.2 - .5	.2 - .5	.3 - .5	.2 - .5	.36 - 2
Mg	magnesium	%	.13 - .4	.15 - .4	.15 - .4	.15 - .5	.26 - 1
Na	sodium	%	0 - .1	0 - .1	0 - .1	0 - .1	0 - .1
Zn	zinc	ppm	20 - 70	20 - 70	20 - 70	15 - 70	21 - 50
Fe	iron	ppm	50 - 250	50 - 250	50 - 250	25 - 100	50 - 350
Mn	manganese	ppm	25 - 100	25 - 100	25 - 100	35 - 100	21 - 100
Cu	copper	ppm	5 - 25	5 - 25	5 - 24	5 - 25	7 - 29
B	boron	ppm	3 - 40	3 - 40	3 - 24	3 - 20	20 - 55
Cl	chloride	%	.3 - .6	.21 - .5	.21 - .5	.21 - .5	

			Beets	Canola		Drybean	Alfalfa
			All stages	Whole	Leaves	All stages	All stages
N	nitrogen	%	3.5 - 5	2.5 - 4	2 - 4.5	3.1 - 6	2.6 - 3.7
P	phosphorus	%	.31 - .8	.25 - .5	.28 - .69	.26 - .5	.26 - .7
K	potassium	%	2 - 6	1.5 - 2.5	2.9 - 5.1	1.9 - 2.5	2.5 - 3.8
S	sulfur	%	.25 - .5	.25 - .5	.17 - 1.01	.21 - .4	.31 - .5
Ca	calcium	%	.5 - 1.5	.5 - 4	1 - 3	.81 - 3	.51 - 3
Mg	magnesium	%	.3 - 2.5	.2 - 1.5	.2 - .75	.26 - .7	.3 - 1
Na	sodium	%	.02 - 3.7	0 - .1	.01 - .5	0 - .1	0 - .1
Zn	zinc	ppm	21 - 80	16 - 70	22 - 49	21 - 50	21 - 70
Fe	iron	ppm	56 - 140	21 - 200	30 - 200	31 - 450	30 - 250
Mn	manganese	ppm	25 - 360	16 - 100	25 - 250	31 - 300	21 - 200
Cu	copper	ppm	6 - 30	3 - 20	4 - 25	7 - 20	8 - 29
B	boron	ppm	25 - 79	30 - 80	15 - 54	21 - 60	31 - 80