

African Violet				Alstroemeria			
	Low-Def	Sufficent Range	High				
	<		>				
N		2.2-2.7		N			
P		0.2-0.9		P			
K		1.5-6.0		K			
Ca %		0.6-1.7		Ca %			
Mg		0.7-1.1		Mg			
S				S			
B		30-200		B			
Cu		5-30		Cu			
Fe		70-320		Fe			
Mn ppm		35-490		Mn ppm			
Zn		20-80		Zn			
Mo				Mo			
Al				Al			
Anthurium Andreanum				Azalea			
	Low-Def	Sufficent Range	High				
	<		>				
N		2.2		N			
P		0.16-0.31		P			
K		2.7-3.9		K			
Ca %		1.0-2.0		Ca %			
Mg		0.34-0.48		Mg			
S				S			
B		55		B			
Cu		6.0		Cu			
Fe		44		Fe			
Mn ppm		110		Mn ppm			
Zn		45		Zn			
Mo				Mo			
Al				Al			
Caladium				Calla			
	Low-Def	Sufficent Range	High				
	<		>				
N		3.6-4.9		N			
P		0.4-0.7		P			
K		2.3-4.1		K			
Ca %		1.1-1.6		Ca %			
Mg		0.1-0.3		Mg			
S				S			
B		95-145		B			
Cu		5-10		Cu			
Fe		65-90		Fe			
Mn ppm		110-135		Mn ppm			
Zn		125-135		Zn			
Mo				Mo			
Al				Al			

Carnations		Young Plants 4th & 5th Leaf Pairs		Carnations	
	Low-Def <	Sufficent Range	High >		
N		4.5-6.0		N	
P		.20-.45		P	
K		2.0-6.0		K	
Ca %		.6-2.0		Ca %	
Mg		.15-.60		Mg	
S				S	
B		25-350		B	
Cu		5-30		Cu	
Fe		30-150		Fe	
Mn ppm		30-300		Mn ppm	
Zn		16-76		Zn	
Mo				Mo	
Al				Al	
Chrysanthemum		Sufficent Range		Common Impatiens	
	Low-Def <		High >		
N		4.5-6.0		N	
P		.23-1.15		P	
K		3.5-10.0		K	
Ca %		.50-4.6		Ca %	
Mg		.13-1.5		Mg	
S				S	
B		25-200		B	
Cu		6-25		Cu	
Fe		125+		Fe	
Mn ppm		200+		Mn ppm	
Zn		10-40		Zn	
Mo				Mo	
Al				Al	
Cyclamen		Sufficent Range		Dieffenbachia	
	Low-Def <		High >		
N		2.9-5.0		N	
P		0.4-1.0		P	
K		1.2-4.5		K	
Ca %		0.3-1.3		Ca %	
Mg		0.4-1.3		Mg	
S				S	
B		70-350		B	
Cu		5-20		Cu	
Fe		150-550		Fe	
Mn ppm		100-500		Mn ppm	
Zn		30-100		Zn	
Mo				Mo	
Al				Al	

Easter Lily				Exacum
	Low-Def <	Sufficent Range	High >	
N		2.4-4.0		N
P		0.1-0.7		P
K		2.0-5.0		K
Ca %		0.2-4.0		Ca %
Mg		0.3-2.0		Mg
S				S
B		20-50		B
Cu		5-25		Cu
Fe		100-250		Fe
Mn ppm		50-250		Mn ppm
Zn		30-70		Zn
Mo				Mo
Al				Al
Ficus Benmgamina				Fraser Fir
	Low-Def <	Sufficent Range	High >	
N		2.2		N
P		0.2		P
K		2.1-2.5		K
Ca %		1.7-2.5		Ca %
Mg		0.3-0.4		Mg
S				S
B		20-40		B
Cu		5-10		Cu
Fe		50		Fe
Mn ppm		22-99		Mn ppm
Zn		26-52		Zn
Mo				Mo
Al				Al
Freesia				Fucsia
	Low-Def <	Sufficent Range	High >	
N		2.7-5.6		N
P		0.4-1.2		P
K		3.1-5.9		K
Ca %		0.4-1.0		Ca %
Mg		0.3-1.8		Mg
S				S
B		30-100		B
Cu		5-130		Cu
Fe		80-115		Fe
Mn ppm		30-540		Mn ppm
Zn		40-110		Zn
Mo				Mo
Al				Al

Geranium				Gerbera	
	Low-Def <	Sufficent Range	High >		
N	2.5	3.4-4.8		N	
P	0.29	.35-.67		P	
K	0.68	2.0-4.3		K	
Ca %	0.75	.75-1.2		Ca %	
Mg	0.15	.20-.52		Mg	
S	0.18	0.27		S	
B	20	30-250		B	
Cu	6	8-16		Cu	
Fe	60	160		Fe	
Mn ppm	10	45-140		Mn ppm	
Zn	6.0	7-25		Zn	
Mo				Mo	
Al				Al	
Gloxinia				Hemlock	
	Low-Def <	Sufficent Range	High >		
N		3.3-3.8		N	
P		0.3-0.5		P	
K		4.5-5.0		K	
Ca %		1.5-2.2		Ca %	
Mg		0.4-0.5		Mg	
S				S	
B		30-35		B	
Cu		5-20		Cu	
Fe		70-150		Fe	
Mn ppm		95-170		Mn ppm	
Zn		20-35		Zn	
Mo				Mo	
Al				Al	

			<b>Hibiscus</b>	
Low-Def <	Sufficent Range	High >		Low-Def <
	308-7.6			N
	0.3-0.7			P
	3.7-4.8			K
	0.6-1.4			Ca %
	0.2-0.4			Mg
				S
	10-50			B
	5-15			Cu
	175-275			Fe
	60-90			Mn ppm
	35-70			Zn
				Mo
				Al
			<b>Hydrangea</b>	
Low-Def <	Sufficent Range	High >		Low-Def <
1.7	1.9-2.4			N
0.2	.3-.5			P
0.7	.80-1.0			K
0.17	.18-.30			Ca %
0.1	.15-.33			Mg
				S
	33			B
	10			Cu
	75			Fe
	55			Mn ppm
	95			Zn
				Mo
	74			Al
			<b>Kalanchoe</b>	
Low-Def <	Sufficent Range	High >		Low-Def <
	2.9-3.0			N
	0.3-0.4			P
	3.9-4.4			K
	0.9-1.1			Ca %
	0.3-0.4			Mg
				S
	30-40			B
	5-10			Cu
	95-130			Fe
	635-690			Mn ppm
	30-45			Zn
				Mo
				Al

"Greenhouse" leaves			Nephrolepis	
Low-Def	Sufficent Range	High	Low-Def	
<		>	<	
3	3.0-5.0		N	
0.15	.20-.35		P	
0.2	2.0-6.0		K	
0.6	1.0-2.0		Ca %	
0.17	.20-.45		Mg	
			S	
27	30-50		B	
7	10-30		Cu	
30-50	50-150		Fe	
30-50	50-200		Mn ppm	
16-76	25-50		Zn	
			Mo	
			Al	
			Petunia	
Low-Def	Sufficent Range	High	Low-Def	
<		>	<	
	4.3-5.3		N	
	0.6-0.8		P	
	2.8-1.8		K	
	2.9-3.3		Ca %	
	0.6-0.8		Mg	
			S	
	45-95		B	
	10-15		Cu	
	405-685		Fe	
	205-480		Mn ppm	
	65-70		Zn	
			Mo	
			Al	
			Primula	
Low-Def	Sufficent Range	High	Low-Def	
<		>	<	
	3.0-4.0		N	
	0.7-1.0		P	
	6.4-8.2		K	
	1.9-2.4		Ca %	
	0.4-0.8		Mg	
			S	
	9.9-30.8		B	
	3.8		Cu	
			Fe	
	82-198		Mn ppm	
	78-195		Zn	
			Mo	
			Al	

			Rhododendron	
Low-Def	Sufficent Range	High	Low-Def	
<		>	<	
	3.8-5.3		N	
	0.3-0.7		P	
	2.3-3.4		K	
	0.5-0.8		Ca %	
	0.4-0.7		Mg	
			S	
	25-60		B	
	5-75		Cu	
	55-155		Fe	
	70-165		Mn ppm	
	25-85		Zn	
			Mo	
			Al	
			Roses upper leaves of Flowering Stem	
Low-Def	Sufficent Range	High	Low-Def	
<		>	<	
1.5	1.5-2.0		N 3	
0.2	.2+		P 0.2	
0.6	.6+		K 1.8	
.45-.60	.6+		Ca % 1	
0.1	.10-.15		Mg 0.25	
0.08	.08+		S	
18	18-20		B 30	
3-4	5-6		Cu 7	
40	40+		Fe 50	
50	50-60		Mn ppm 30	
20	20-30		Zn 15	
			Mo	
			Al	
			Snapdragon	
Low-Def	Sufficent Range	High	Low-Def	
<		>	<	
	2.8-4.6		N	
	0.4-0.6		P	
	2.2-2.5		K	
	1.6-2.4		Ca %	
	0.4-0.7		Mg	
			S	
	25-35		B	
	5-10		Cu	
	95-335		Fe	
	75-220		Mn ppm	
	30-45		Zn	
			Mo	
			Al	

			Streptocarpus	
Low-Def	Sufficent Range	High	Low-Def	
<		>	<	
	3.3-4.1		N	
	0.3-0.7		P	
	3.1-3.9		K	
	0.9-4.2		Ca %	
	0.3-2.8		Mg	
			S	
	25-50		B	
	5-10		Cu	
	80-130		Fe	
	65-260		Mn ppm	
	30-80		Zn	
			Mo	
			Al	
			Zonal geranium	
Low-Def	Sufficent Range	High	Low-Def	
<		>	<	
	1.5-2.0		N	
	.2+		P	
	.75+		K	
	.50+		Ca %	
	0.10-.15		Mg	
	.08+		S	
	18-20		B	
	5-6		Cu	
	50-100		Fe	
	50-100		Mn ppm	
	20-30		Zn	
			Mo	
			Al	



		Holiday Cactus		
Sufficent Range	High >		Low-Def <	Sufficent Range
3.5-4.5			N	2.7-3.7
0.2-0.6			P	0.5-0.9
2.0-2.9			K	6.2-7.1
1.9-2.3			Ca %	0.7-0.9
0.5-0.7			Mg	1.6-2.2
			S	
20-25			B	65-70
5-10			Cu	10-15
60-75			Fe	105-110
135-180			Mn ppm	35-130
35-50			Zn	50-65
			Mo	
			Al	
		Ivy geranium		
Sufficent Range	High >		Low-Def <	Sufficent Range
2.0-3.8			N	3.4-4.4
0.3-2.5			P	0.4-0.7
2.5-6.3			K	2.8-4.7
0.8-1.5			Ca %	0.9-1.4
0.2-0.4			Mg	0.2-0.6
			S	
35-50			B	30-280
5-10			Cu	5-15
85-115			Fe	115-270
100-345			Mn ppm	40-175
50-105			Zn	10-45
			Mo	
			Al	
		Kalmia		
Sufficent Range	High >		Low-Def <	Sufficent Range
2.5-5.0			N	1.0-1.7
0.2-0.5			P	0.15
2.0-4.8			K	0.45
1.1-4.5			Ca %	0.39
0.4-1.0			Mg	0.18
			S	0.09
30-60			B	10-19
5-20			Cu	3-4
75-200			Fe	10
60-250			Mn ppm	50
25-80			Zn	15-24
			Mo	0.3+
			Al	

		<b>New Guinea impatiens</b>		
Sufficent Range	High >		Low-Def <	Sufficent Range
1.7-2.5			N	3.3-4.9
0.3-0.6			P	0.3-0.8
2.5-3.9			K	1.9-2.7
0.9-1.3			Ca %	1.9-2.7
0.6-0.7			Mg	0.3-0.8
			S	
22-44			B	50-60
12			Cu	5-10
49-181			Fe	160-890
52-149			Mn ppm	140-245
			Zn	40-85
			Mo	
			Al	
		<b>Poinsettia</b> Mature Fully expanded Leaves		
Sufficent Range	High >		Low-Def <	Sufficent Range
2.8-5.8			N	4.0-6.0
0.5-1.2			P	0.2-1.0
3.5-5.5			K	1.5-5.0
0.6-4.8			Ca %	0.4-2.0
0.3-1.4			Mg	0.2-1.0
			S	
20-50			B	20-200
5-45			Cu	5-15
40-700			Fe	100-300
90-185			Mn ppm	45-300
30-90			Zn	25-150
			Mo	1.0-5.0
			Al	91
		<b>Regal Geranium</b>		
Sufficent Range	High >		Low-Def <	Sufficent Range
2.5-3.3			N	3.0-3.2
0.4-0.8			P	0.3-0.6
2.1-4.2			K	1.1-3.1
0.6-1.0			Ca %	1.2-2.6
0.2-0.4			Mg	0.3-0.9
			S	
30-35			B	15-45
5-10			Cu	5-10
75-155			Fe	120-225
50-80			Mn ppm	115-475
40-45			Zn	35-50
			Mo	
			Al	

		<b>Rieger Begonia</b>		
Sufficent Range	High >		Low-Def <	Sufficent Range
1.4-1.75			N	3.4-4.6
.20-.30			P	0.4-0.8
1.0-1.2			K	2.0-3.5
.90-1.2			Ca %	0.7-2.4
.20-.30			Mg	0.3-0.8
.80+			S	
30-50			B	35-130
4-6			Cu	5-10
40-80			Fe	80-390
50-500			Mn ppm	35-190
20-50			Zn	20-30
			Mo	
			Al	
		<b>Seed Geranium</b>		
Sufficent Range	High >		Low-Def <	Sufficent Range
3.0-5.0			N	3.7-4.8
.20-.30			P	0.3-0.6
1.8-3.0			K	3.3-3.9
1.0-1.9			Ca %	1.2-2.1
.25-.45			Mg	0.2-0.4
			S	
30-60			B	35-60
7-15			Cu	5-15
50-150			Fe	120-340
30-350			Mn ppm	110-285
15-50			Zn	35-60
			Mo	
			Al	
		<b>Spathiphyllum</b>		
Sufficent Range	High >		Low-Def <	Sufficent Range
4.0-5.3			N	4.2
0.2-0.6			P	0.3-0.5
2.2-4.1			K	4.7
0.5-1.4			Ca %	0.8-1.2
.5-1.0			Mg	0.2
			S	
15-40			B	
5-15			Cu	6.4
70-135			Fe	
60-185			Mn ppm	
30-55			Zn	117
			Mo	
			Al	

		<b>Wax begonia</b>		
Sufficent Range	High >		Low-Def <	Sufficent Range
2.0-3.5			N	4.4-5.2
0.1-0.7			P	0.3-0.4
4.8-5.5			K	3.4-4.2
1.2-1.9			Ca %	1.3-2.1
0.3-0.5			Mg	0.6-1.0
			S	
55-65			B	30-40
15-20			Cu	10-15
90-260			Fe	100-260
130-300			Mn ppm	90-355
85-130			Zn	50-65
			Mo	
			Al	
		<b>Vinca</b>		
Sufficent Range	High >		Low-Def <	Sufficent Range
3.8-4.4			N	4.9-5.4
0.3-0.5			P	0.4-0.6
2.6-3.5			K	2.9-3.6
1.4-2.0			Ca %	1.4-1.6
0.2-0.4			Mg	0.4-0.5
			S	
40-50			B	25-40
5-15			Cu	5-10
110-580			Fe	95-150
270-325			Mn ppm	165-300
50-55			Zn	40-45
			Mo	
			Al	

High  
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High  
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