Cutting tissue nutrient survey 2004-06

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Notes

Tissue levels that are above or below the "low" or "high" levels do not necessarily indicate a problem.
Samples were entire unrooted cuttings (including stems and leaves) from crops that appeared healthy.
The "low" level represents the 10th percentile, and the "high" level is the 90th percentile. In other words, 10% of samples were below the "low" level, and 10% of samples were above the "high" level.
For Al, the "low" level is 0 because this is not an essential nutrient.
Samples containing copper at 100 ppm or above were removed from the survey, because it was assumed that a copper fungicide was applied.
Only species with at least 10 samples are included. Increasing sample size and number of locations means increasing confidence that the survey represents typical numbers for the species.

Ajuga	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	3.8	5.5	4.5	3.5	6.1	0.7
	P %	0.3	0.7	0.5	0.3	0.7	0.1
	K %	2.5	4.7	3.5	2.1	5.0	0.8
	Ca %	0.6	1.4	0.9	0.4	1.6	0.3
	Mg %	0.2	0.5	0.3	0.1	0.7	0.1
	S %	0.2	1.0	0.6	0.1	1.8	0.4
	Fe ppm	60	172	106	40	299	61
	Mn ppm	39	83	63	29	181	29
	Zn ppm	24	50	33	22	55	9
	Cu ppm	6	22	12	4	32	6
	B ppm	29	66	44	22	87	16
	Mo ppm	2.0	6.9	4.1	1.8	9.6	2.0
	Al ppm	0	371	153	12	1512	299
Samples	26	**Locations**	2				

Angelonia	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	3.4	4.6	4.0	2.8	5.1	0.5
	P %	0.3	0.5	0.4	0.3	0.6	0.1
	K %	2.4	3.4	2.9	1.5	4.4	0.5
	Ca %	0.3	0.8	0.5	0.2	1.2	0.2
	Mg %	0.2	0.4	0.3	0.2	0.5	0.1
	S %	0.1	0.5	0.3	0.1	0.7	0.1
	Fe ppm	60	125	89	44	242	34
	Mn ppm	41	192	115	22	242	54
	Zn ppm	40	112	74	26	140	26
	Cu ppm	3	12	7	1	46	8
	B ppm	26	47	36	13	65	9
	Mo ppm	0.6	4.6	1.7	0.5	8.6	1.7
	Al ppm	0	169	64	6	372	73
Samples	50	**Locations**	4				

Argyranthemum	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	4.3	6.4	5.4	2.5	7.1	0.8
	P %	0.4	0.7	0.5	0.3	0.9	0.1
	K %	3.5	5.9	4.7	2.8	6.7	0.9
	Ca %	1.0	1.7	1.3	0.7	2.3	0.3
	Mg %	0.2	0.6	0.4	0.1	1.0	0.2
	S %	0.5	1.4	0.9	0.3	2.3	0.4
	Fe ppm	63	168	104	46	282	46
	Mn ppm	82	285	175	37	397	75
	Zn ppm	20	84	46	15	232	40
	Cu ppm	4	24	12	2	77	14
	B ppm	32	88	61	24	261	29
	Mo ppm	1.4	12.4	5.5	0.7	25.8	5.1
	Al ppm	0	115	52	12	176	39
Samples	98	**Locations**	3				

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Asteriscus	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	3.7	5.0	4.4	1.9	5.5	0.9
	P %	0.4	0.8	0.5	0.4	0.8	0.1
	K %	3.1	3.8	3.6	3.1	3.8	0.2
	Ca %	2.9	3.6	3.2	2.8	3.8	0.3
	Mg %	0.5	0.6	0.6	0.5	0.7	0.1
	S %	1.1	2.1	1.6	0.9	2.2	0.4
	Fe ppm	45	75	50	0	77	18
	Mn ppm	42	297	89	39	344	99
	Zn ppm	16	123	45	13	189	50
	Cu ppm	5	44	13	5	59	17
	B ppm	51	76	59	4	84	18
	Mo ppm	2.0	21.5	9.5	1.7	22.7	6.7
	Al ppm	0	55	35	17	81	17
Samples	14	**Locations**	1				

Bacopa	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	4.1	5.6	4.8	3.0	6.0	0.7
	P %	0.4	0.7	0.5	0.3	0.9	0.1
	K %	2.9	4.4	3.7	1.7	6.8	0.8
	Ca %	0.6	1.4	0.9	0.5	2.8	0.4
	Mg %	0.2	0.5	0.3	0.2	0.7	0.1
	S %	0.3	0.7	0.5	0.2	1.3	0.2
	Fe ppm	66	133	102	41	264	39
	Mn ppm	55	195	124	33	457	74
	Zn ppm	24	81	47	18	140	23
	Cu ppm	4	40	15	2	56	13
	B ppm	25	65	40	4	98	17
	Mo ppm	1.3	6.9	3.5	0.8	13.0	2.7
	Al ppm	0	90	62	9	433	89
Samples	55	**Locations**	4				

Begonia	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	3.6	6.5	5.1	3.6	6.7	0.9
	P %	0.3	0.6	0.5	0.3	0.7	0.1
	K %	1.8	3.1	2.5	1.7	3.3	0.5
	Ca %	0.7	1.5	1.0	0.7	1.8	0.3
	Mg %	0.4	0.9	0.5	0.3	0.9	0.2
	S %	0.2	0.8	0.5	0.2	0.8	0.2
	Fe ppm	66	248	129	0	350	84
	Mn ppm	23	156	87	18	168	48
	Zn ppm	25	142	72	21	302	66
	Cu ppm	1	34	11	1	40	11
	B ppm	28	84	47	11	110	21
	Mo ppm	0.8	27.6	15.8	0.6	29.8	10.1
	Al ppm	0	178	66	12	237	57
Samples	18	**Locations**	3				

Bidens	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	4.3	6.3	5.6	4.2	6.3	0.7
	P %	0.5	0.7	0.6	0.5	0.7	0.1
	K %	3.1	4.5	3.6	3.0	4.5	0.5
	Ca %	0.6	0.8	0.7	0.6	0.9	0.1
	Mg %	0.4	0.6	0.4	0.3	0.6	0.1
	S %	0.5	0.8	0.6	0.5	0.8	0.1
	Fe ppm	81	454	164	77	454	154
	Mn ppm	38	135	78	38	135	36
	Zn ppm	32	71	53	26	90	18
	Cu ppm	5	10	7	5	10	2
	B ppm	39	84	58	39	98	20
	Mo ppm	1.7	4.5	3.2	1.7	10.0	1.8
	Al ppm	0	58	26	13	71	16
Samples	19	**Locations**	1				

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Brachycome	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	3.6	6.0	4.6	1.1	6.4	1.2
	P %	0.4	0.7	0.5	0.2	0.8	0.1
	K %	2.9	4.6	3.7	2.5	4.9	0.6
	Ca %	0.5	1.2	0.9	0.5	2.6	0.5
	Mg %	0.2	0.4	0.3	0.1	0.8	0.2
	S %	0.5	0.9	0.7	0.4	1.1	0.2
	Fe ppm	56	143	107	53	282	52
	Mn ppm	85	320	177	76	359	84
	Zn ppm	24	74	49	21	101	21
	Cu ppm	5	9	8	5	28	6
	B ppm	39	71	58	35	130	20
	Mo ppm	1.6	11.2	5.1	0.9	18.1	5.0
	Al ppm	0	70	36	7	120	26
Samples	22	**Locations**	1				

Bracteantha	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	3.8	5.9	4.9	2.6	7.0	0.8
	P %	0.5	0.8	0.6	0.4	1.2	0.1
	K %	3.6	6.3	4.9	2.5	6.7	1.0
	Ca %	0.8	1.5	1.1	0.4	1.9	0.3
	Mg %	0.2	0.5	0.4	0.1	0.8	0.1
	S %	0.5	1.0	0.7	0.2	2.4	0.3
	Fe ppm	56	139	94	27	198	35
	Mn ppm	88	320	194	46	464	87
	Zn ppm	49	133	89	26	196	34
	Cu ppm	3	14	8	0	65	8
	B ppm	37	90	61	22	126	21
	Mo ppm	1.7	12.8	6.0	0.1	25.6	4.5
	Al ppm	0	145	64	13	219	49
Samples	126	**Locations**	5				

Calibrachoa	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	4.1	5.8	4.9	2.1	6.9	0.7
	P %	0.3	0.6	0.5	0.2	1.1	0.1
	K %	2.6	4.0	3.3	1.2	5.8	0.6
	Ca %	0.5	1.4	0.9	0.3	3.1	0.4
	Mg %	0.3	0.7	0.5	0.2	0.9	0.2
	S %	0.2	1.1	0.7	0.1	1.4	0.3
	Fe ppm	61	194	115	40	549	76
	Mn ppm	41	157	97	24	466	63
	Zn ppm	27	69	51	15	235	37
	Cu ppm	4	14	11	1	98	15
	B ppm	28	78	49	12	103	20
	Mo ppm	2.5	15.4	8.2	0.9	28.6	5.7
	Al ppm	0	189	82	3	1950	177
Samples	179	**Locations**	14				

Chrysanthemum	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	3.2	6.0	4.6	1.9	7.0	1.1
Dendranthema grandiflora	P %	0.4	0.9	0.6	0.3	1.3	0.2
	K %	3.7	5.7	4.7	2.2	6.3	0.8
	Ca %	0.6	1.2	0.9	0.5	1.8	0.3
	Mg %	0.1	0.5	0.3	0.1	0.8	0.2
	S %	0.4	0.9	0.6	0.3	1.3	0.2
	Fe ppm	65	113	89	50	140	18
	Mn ppm	48	271	162	29	410	85
	Zn ppm	28	89	61	18	177	29
	Cu ppm	7	14	10	7	16	3
	B ppm	42	77	56	32	102	14
	Mo ppm	2.3	15.3	7.7	1.1	27.2	5.3
	Al ppm	0	98	50	12	142	34
Samples	68	**Locations**	1				

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Cleome	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	3.8	7.0	5.3	3.6	7.0	1.3
	P %	0.5	0.9	0.7	0.5	1.0	0.2
	K %	2.3	3.1	2.8	2.1	3.5	0.3
	Ca %	0.9	2.0	1.4	0.8	2.2	0.4
	Mg %	0.3	0.8	0.5	0.3	0.8	0.2
	S %	1.6	4.4	2.9	1.4	9.7	1.9
	Fe ppm	43	207	94	43	228	55
	Mn ppm	36	213	77	21	213	51
	Zn ppm	27	116	66	23	125	33
	Cu ppm	2	6	4	2	7	2
	B ppm	39	58	46	35	74	10
	Mo ppm	2.9	25.0	17.6	2.9	27.8	8.6
	Al ppm	0	99	54	22	104	26
Samples	56	**Locations**	1				

Dahlia	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	3.8	6.5	5.1	2.9	6.9	1.1
	P %	0.6	1.0	0.8	0.5	1.4	0.2
	K %	3.4	5.2	4.3	3.3	6.3	0.8
	Ca %	0.5	1.4	1.1	0.4	2.0	0.4
	Mg %	0.4	0.7	0.5	0.3	0.7	0.1
	S %	0.2	0.7	0.5	0.2	0.9	0.2
	Fe ppm	83	270	137	77	353	67
	Mn ppm	52	247	125	49	353	77
	Zn ppm	44	104	69	40	153	28
	Cu ppm	9	21	15	8	49	8
	B ppm	39	105	69	31	189	34
	Mo ppm	1.4	9.2	3.0	1.0	11.6	2.9
	Al ppm	0	210	89	23	369	84
Samples	26	**Locations**	4				

Diascia	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	4.4	6.2	5.5	4.3	7.6	0.8
	P %	0.5	0.8	0.6	0.3	1.0	0.1
	K %	3.1	4.2	3.7	1.8	5.9	0.7
	Ca %	0.8	1.6	1.1	0.3	1.6	0.3
	Mg %	0.2	0.7	0.4	0.2	0.9	0.2
	S %	0.1	0.8	0.5	0.1	0.9	0.3
	Fe ppm	94	202	138	73	226	42
	Mn ppm	57	135	105	23	539	88
	Zn ppm	33	60	46	28	99	15
	Cu ppm	5	13	8	4	18	3
	B ppm	24	64	43	19	71	14
	Mo ppm	1.6	6.3	3.2	1.4	11.2	2.0
	Al ppm	0	122	68	18	197	40
Samples	27	**Locations**	4				

Euphorbia	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	3.6	5.7	4.6	2.7	5.8	0.7
	P %	0.3	0.9	0.6	0.3	1.8	0.3
	K %	2.2	3.8	2.9	1.8	4.2	0.6
	Ca %	0.6	1.5	1.0	0.4	4.5	0.6
	Mg %	0.2	0.6	0.4	0.2	1.4	0.2
	S %	0.3	0.9	0.6	0.1	3.1	0.4
	Fe ppm	49	123	79	0	178	33
	Mn ppm	35	106	65	13	177	32
	Zn ppm	27	67	54	20	426	54
	Cu ppm	4	11	8	2	44	7
	B ppm	24	87	49	5	124	26
	Mo ppm	6.6	18.7	12.3	4.3	29.5	5.4
	Al ppm	0	116	58	11	333	60
Samples	56	**Locations**	2				

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Fuchsia	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	3.6	5.2	4.4	2.6	5.5	0.7
	P %	0.4	0.7	0.5	0.3	0.8	0.1
	K %	2.1	3.3	2.6	1.1	4.5	0.6
	Ca %	0.8	1.6	1.2	0.3	2.1	0.3
	Mg %	0.3	0.8	0.4	0.2	0.8	0.2
	S %	0.1	0.6	0.3	0.1	0.9	0.2
	Fe ppm	67	315	177	59	403	95
	Mn ppm	36	201	100	27	489	91
	Zn ppm	27	69	50	19	117	19
	Cu ppm	7	36	19	5	93	17
	B ppm	26	70	47	14	92	18
	Mo ppm	1.6	15.8	6.8	1.1	24.4	6.3
	Al ppm	0	110	50	9	213	46
Samples	44	**Locations**	9				

Geranium (hybrid, non-zonal)	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	2.6	4.8	3.5	2.4	5.4	0.8
Pelargonium	P %	0.4	0.7	0.5	0.3	0.7	0.1
	K %	2.6	3.4	3.0	1.6	3.6	0.4
	Ca %	0.8	1.4	1.1	0.6	1.6	0.2
	Mg %	0.2	0.3	0.3	0.2	0.4	0.1
	S %	0.1	0.2	0.1	0.1	0.2	0.0
	Fe ppm	63	157	105	44	254	44
	Mn ppm	75	309	190	30	425	89
	Zn ppm	25	54	39	22	86	13
	Cu ppm	6	13	9	5	26	4
	B ppm	25	59	41	24	76	14
	Mo ppm	1.7	5.6	3.4	1.3	7.6	1.6
	Al ppm	0	227	100	16	277	73
Samples	30	**Locations**	6				

Geranium (ivy)	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	3.0	4.1	3.5	2.3	5.9	0.6
Pelargonium peltatum	P %	0.3	0.6	0.4	0.3	0.7	0.1
	K %	2.8	3.8	3.3	2.6	4.3	0.4
	Ca %	0.9	1.6	1.2	0.7	2.2	0.3
	Mg %	0.2	0.4	0.3	0.2	0.6	0.1
	S %	0.1	0.2	0.1	0.1	0.2	0.0
	Fe ppm	71	167	114	44	215	37
	Mn ppm	104	444	255	39	574	119
	Zn ppm	20	36	26	17	84	10
	Cu ppm	4	12	7	3	13	3
	B ppm	25	76	50	21	102	18
	Mo ppm	3.2	13.9	8.0	1.0	27.4	5.4
	Al ppm	0	194	108	16	268	58
Samples	66	**Locations**	7				

Geranium (zonal)	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	2.7	4.8	3.5	1.0	6.9	0.8
Pelargonium hortorum	P %	0.3	0.6	0.4	0.2	0.8	0.1
	K %	2.2	3.5	2.8	1.2	4.6	0.6
	Ca %	0.8	1.5	1.2	0.5	2.7	0.3
	Mg %	0.2	0.4	0.3	0.1	0.9	0.1
	S %	0.1	0.2	0.2	0.1	0.6	0.1
	Fe ppm	78	252	152	47	466	71
	Mn ppm	114	540	303	31	599	153
	Zn ppm	28	89	56	18	139	25
	Cu ppm	5	16	10	2	70	8
	B ppm	25	56	40	12	134	15
	Mo ppm	2.1	6.6	4.1	0.9	27.9	2.5
	Al ppm	0	339	168	18	580	107
Samples	235	**Locations**	11				

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Hedera	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	2.8	4.1	3.5	2.4	5.9	0.6
	P %	0.2	0.4	0.3	0.2	0.4	0.1
	K %	2.1	3.0	2.6	1.8	3.4	0.3
	Ca %	0.5	1.0	0.7	0.4	1.2	0.2
	Mg %	0.2	0.3	0.2	0.1	0.3	0.0
	S %	0.3	0.5	0.4	0.1	0.9	0.1
	Fe ppm	46	120	77	37	212	39
	Mn ppm	30	169	90	22	460	79
	Zn ppm	22	68	42	13	164	25
	Cu ppm	4	15	8	1	25	5
	B ppm	18	34	26	13	44	6
	Mo ppm	1.0	4.6	2.8	0.1	17.4	2.6
	Al ppm	0	145	67	13	411	91
Samples	79	**Locations**	1				

Helichrysum	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	2.9	4.8	3.9	2.7	5.1	0.7
	P %	0.2	0.6	0.4	0.2	0.6	0.1
	K %	2.4	5.1	3.3	1.9	5.3	1.1
	Ca %	0.6	1.3	0.9	0.6	1.6	0.3
	Mg %	0.1	0.6	0.3	0.1	0.6	0.2
	S %	0.2	0.7	0.4	0.2	0.8	0.2
	Fe ppm	79	169	128	64	274	59
	Mn ppm	50	253	130	48	274	80
	Zn ppm	42	62	51	41	69	9
	Cu ppm	4	10	8	3	19	4
	B ppm	25	91	50	24	91	26
	Mo ppm	0.6	13.4	5.0	0.5	16.7	5.0
	Al ppm	0	300	199	30	1094	311
Samples	10	**Locations**	4				

Heliotrope	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	3.3	5.4	4.5	2.2	6.0	0.7
	P %	0.5	0.9	0.7	0.3	1.0	0.2
	K %	1.9	3.8	3.0	1.7	4.6	0.7
	Ca %	1.6	3.0	2.5	0.8	5.6	0.7
	Mg %	0.4	1.1	0.7	0.2	1.3	0.3
	S %	0.4	1.2	0.7	0.2	1.4	0.3
	Fe ppm	75	246	141	70	332	66
	Mn ppm	38	248	132	24	354	83
	Zn ppm	37	114	81	23	220	34
	Cu ppm	6	42	20	5	96	18
	B ppm	48	97	69	32	115	20
	Mo ppm	1.7	9.8	4.7	1.1	20.9	4.0
	Al ppm	0	137	63	16	229	47
Samples	63	**Locations**	8				

Impatiens wallerana	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	3.3	5.5	4.4	2.7	6.1	0.9
	P %	0.4	0.9	0.7	0.4	1.3	0.2
	K %	2.1	4.2	3.1	1.3	4.8	0.8
	Ca %	1.6	2.7	2.2	1.4	3.1	0.4
	Mg %	0.3	0.8	0.6	0.2	0.9	0.2
	S %	0.3	0.7	0.4	0.2	0.9	0.2
	Fe ppm	117	293	181	46	524	107
	Mn ppm	83	323	190	27	501	112
	Zn ppm	32	94	62	26	198	32
	Cu ppm	6	16	13	4	48	7
	B ppm	21	73	37	14	100	20
	Mo ppm	5.0	25.9	14.2	4.2	29.1	7.3
	Al ppm	0	710	227	22	1363	306
Samples	32	**Locations**	8				

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QAL

Ipomea	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	3.7	6.0	5.1	3.0	6.6	0.8
	P %	0.4	0.9	0.7	0.3	1.3	0.2
	K %	3.4	4.8	4.1	3.2	5.0	0.5
	Ca %	0.6	1.6	1.1	0.4	2.2	0.4
	Mg %	0.3	0.5	0.4	0.2	0.9	0.1
	S %	0.3	1.1	0.7	0.1	1.5	0.3
	Fe ppm	70	137	107	48	190	31
	Mn ppm	55	206	115	39	263	63
	Zn ppm	32	85	54	24	92	20
	Cu ppm	4	44	18	3	96	21
	B ppm	36	74	54	32	128	17
	Mo ppm	2.8	10.1	6.3	2.2	20.3	3.7
	Al ppm	0	169	67	7	265	68
Samples	51	**Locations**	4				

Kalanchoe	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	3.3	5.4	4.3	2.8	6.3	0.8
	P %	0.3	2.3	0.6	0.2	4.5	0.9
	K %	2.1	3.3	2.6	0.6	3.9	0.6
	Ca %	0.4	4.1	3.0	0.2	4.9	1.1
	Mg %	0.2	0.4	0.3	0.2	0.7	0.1
	S %	0.3	40.3	6.4	0.1	64.4	16.6
	Fe ppm	44	80	59	18	112	16
	Mn ppm	25	94	54	15	184	31
	Zn ppm	10	79	49	6	118	26
	Cu ppm	5	36	13	2	63	13
	B ppm	6	60	42	1	75	18
	Mo ppm	1.0	16.4	4.6	0.1	29.3	6.7
	Al ppm	0	83	38	13	191	32
Samples	90	**Locations**	1				

Lantana	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	3.5	5.2	4.3	2.2	6.0	0.7
	P %	0.4	0.7	0.6	0.3	0.8	0.1
	K %	2.7	3.6	3.2	2.3	4.9	0.5
	Ca %	0.9	1.5	1.1	0.8	1.7	0.2
	Mg %	0.3	0.7	0.5	0.2	0.8	0.1
	S %	0.2	0.6	0.4	0.1	2.6	0.4
	Fe ppm	74	160	119	52	394	59
	Mn ppm	56	240	139	25	445	88
	Zn ppm	43	72	58	35	107	14
	Cu ppm	6	21	11	5	24	5
	B ppm	35	101	60	26	121	25
	Mo ppm	1.2	4.9	2.5	0.9	7.1	1.5
	Al ppm	0	149	78	7	581	108
Samples	40	**Locations**	8				

Lobelia	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	4.3	5.2	4.7	3.7	5.3	0.4
	P %	0.4	0.9	0.6	0.4	1.0	0.2
	K %	3.9	5.7	4.8	3.3	6.2	0.8
	Ca %	0.6	1.1	0.8	0.6	1.1	0.1
	Mg %	0.2	0.5	0.3	0.2	0.6	0.1
	S %	0.2	0.4	0.3	0.2	0.4	0.1
	Fe ppm	86	408	181	79	431	107
	Mn ppm	48	150	99	47	261	52
	Zn ppm	29	154	74	22	215	54
	Cu ppm	3	11	6	3	24	5
	B ppm	19	46	26	19	48	10
	Mo ppm	1.0	11.7	4.0	1.0	19.6	4.8
	Al ppm	0	516	221	28	808	222
Samples	18	**Locations**	4				

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QAL

Lysimachia	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	3.7	5.1	4.2	3.6	5.3	0.5
	P %	0.3	0.6	0.4	0.2	0.8	0.1
	K %	2.5	4.5	3.3	2.4	6.5	1.0
	Ca %	0.3	0.8	0.6	0.3	3.3	0.6
	Mg %	0.1	0.3	0.2	0.1	1.1	0.2
	S %	0.3	0.8	0.4	0.1	1.0	0.2
	Fe ppm	70	114	93	54	223	37
	Mn ppm	14	78	47	13	176	40
	Zn ppm	19	53	41	16	232	44
	Cu ppm	2	11	6	0	14	4
	B ppm	20	53	37	16	80	16
	Mo ppm	2.0	16.2	9.4	0.7	27.2	6.0
	Al ppm	0	77	55	17	191	42
Samples	21	**Locations**	2				

Muhlenbeckia	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	4.1	5.1	4.5	3.9	5.5	0.4
	P %	0.3	0.4	0.3	0.3	0.5	0.1
	K %	2.4	3.3	2.9	2.4	3.4	0.3
	Ca %	0.3	0.8	0.6	0.3	1.0	0.2
	Mg %	0.3	0.5	0.4	0.3	0.5	0.1
	S %	0.4	0.6	0.5	0.4	0.8	0.1
	Fe ppm	67	124	96	60	126	18
	Mn ppm	56	181	92	49	214	44
	Zn ppm	27	54	38	25	78	13
	Cu ppm	5	20	11	2	25	6
	B ppm	28	57	45	26	61	10
	Mo ppm	9.8	27.2	19.3	7.6	28.0	7.0
	Al ppm	0	54	38	18	88	16
Samples	19	**Locations**	1				

Nemesia	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	4.2	6.2	5.2	3.7	7.1	0.7
	P %	0.5	0.7	0.6	0.3	0.9	0.1
	K %	2.5	4.0	3.3	1.1	6.1	0.7
	Ca %	0.8	1.5	1.1	0.5	2.4	0.3
	Mg %	0.2	0.6	0.4	0.1	0.9	0.2
	S %	0.4	0.9	0.6	0.1	1.4	0.2
	Fe ppm	69	248	128	50	571	90
	Mn ppm	55	164	106	38	533	64
	Zn ppm	44	95	67	23	527	36
	Cu ppm	7	18	11	4	64	7
	B ppm	36	96	62	29	420	34
	Mo ppm	1.5	8.9	4.6	0.8	29.6	5.3
	Al ppm	0	88	47	8	1461	101
Samples	244	**Locations**	5				

New Guinea impatiens	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	3.1	5.5	4.2	2.4	7.6	0.9
	P %	0.4	0.6	0.5	0.2	1.2	0.1
	K %	1.9	2.9	2.4	0.8	3.7	0.4
	Ca %	1.4	2.2	1.7	1.0	2.9	0.3
	Mg %	0.2	0.6	0.4	0.2	1.0	0.2
	S %	0.5	1.6	1.0	0.1	2.6	0.4
	Fe ppm	60	298	129	42	588	98
	Mn ppm	41	217	115	21	591	94
	Zn ppm	32	69	51	6	367	25
	Cu ppm	3	10	6	1	46	5
	B ppm	23	51	37	17	154	15
	Mo ppm	1.3	25.5	11.8	0.2	29.4	9.2
	Al ppm	0	133	66	13	1055	95
Samples	544	**Locations**	9				

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Oenothera	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	3.8	5.1	4.4	3.8	5.3	0.5
	P %	0.4	0.5	0.5	0.3	0.8	0.1
	K %	2.6	3.5	3.1	2.4	3.9	0.4
	Ca %	1.0	1.3	1.2	0.9	1.9	0.3
	Mg %	0.2	0.6	0.4	0.2	0.6	0.1
	S %	0.5	0.8	0.6	0.5	1.4	0.3
	Fe ppm	63	140	107	0	235	56
	Mn ppm	62	209	137	47	233	63
	Zn ppm	35	126	78	34	183	45
	Cu ppm	4	30	11	2	45	14
	B ppm	33	54	47	7	97	22
	Mo ppm	1.0	4.4	2.2	1.0	6.0	1.5
	Al ppm	0	46	32	7	53	14
Samples	11	**Locations**	1				

Osteospermum	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	3.7	6.4	5.2	2.5	8.0	1.0
	P %	0.4	0.9	0.6	0.1	1.4	0.2
	K %	3.0	4.6	3.7	0.6	6.2	0.7
	Ca %	1.1	2.5	1.8	0.7	3.6	0.5
	Mg %	0.4	1.0	0.7	0.2	1.5	0.3
	S %	0.3	1.9	1.1	0.1	3.2	0.6
	Fe ppm	67	177	116	57	518	54
	Mn ppm	83	278	167	20	583	92
	Zn ppm	28	79	51	17	182	25
	Cu ppm	7	23	13	0	77	10
	B ppm	34	81	57	17	226	24
	Mo ppm	2.2	22.5	9.9	0.4	30.0	7.7
	Al ppm	0	116	64	10	1491	118
Samples	205	**Locations**	14				

Penstemon	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	3.1	5.4	3.9	3.0	5.4	0.8
	P %	0.5	0.6	0.5	0.4	0.7	0.1
	K %	2.0	3.2	2.6	1.9	4.3	0.7
	Ca %	0.4	1.0	0.7	0.4	1.4	0.3
	Mg %	0.3	0.5	0.4	0.2	0.6	0.1
	S %	0.3	0.7	0.6	0.2	2.5	0.6
	Fe ppm	44	153	88	32	312	73
	Mn ppm	22	156	80	22	165	47
	Zn ppm	28	67	42	24	70	14
	Cu ppm	3	11	6	3	11	3
	B ppm	37	54	43	34	57	6
	Mo ppm	0.7	3.6	2.0	0.7	3.6	1.1
	Al ppm	0	83	38	10	86	25
Samples	14	**Locations**	4				

Penta	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	3.2	5.2	4.0	2.6	5.4	0.7
	P %	0.5	1.1	0.8	0.5	1.6	0.3
	K %	2.3	3.4	2.7	0.7	3.4	0.6
	Ca %	0.9	1.6	1.1	0.3	1.7	0.3
	Mg %	0.2	0.8	0.5	0.2	0.9	0.2
	S %	0.2	1.1	0.7	0.2	3.2	0.7
	Fe ppm	42	267	131	0	334	81
	Mn ppm	49	189	121	13	573	116
	Zn ppm	25	126	58	24	205	43
	Cu ppm	4	31	9	3	45	10
	B ppm	15	64	45	7	65	15
	Mo ppm	2.4	8.1	4.2	2.2	14.6	3.0
	Al ppm	0	334	121	7	398	120
Samples	19	**Locations**	1				

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QAL

Perovskia	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	2.2	4.6	3.6	2.2	5.2	0.9
	P %	0.3	0.5	0.5	0.2	0.6	0.1
	K %	2.1	4.1	3.3	1.5	4.2	0.8
	Ca %	0.4	0.8	0.6	0.4	1.0	0.2
	Mg %	0.1	0.3	0.2	0.1	0.3	0.0
	S %	0.2	0.6	0.4	0.2	0.7	0.2
	Fe ppm	44	137	90	41	188	43
	Mn ppm	22	86	63	17	252	62
	Zn ppm	27	76	49	12	169	40
	Cu ppm	3	13	6	3	14	4
	B ppm	32	72	49	31	88	16
	Mo ppm	0.9	4.1	2.3	0.9	6.0	1.6
	Al ppm	0	117	117	13	836	219
Samples	12	**Locations**	3				

Petunia	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	4.5	6.9	5.7	2.8	7.3	0.9
	P %	0.4	0.7	0.6	0.3	1.1	0.1
	K %	4.1	6.0	5.0	2.5	8.0	0.8
	Ca %	0.7	1.8	1.1	0.4	3.2	0.5
	Mg %	0.3	0.8	0.5	0.2	1.1	0.2
	S %	0.4	1.1	0.8	0.2	2.1	0.3
	Fe ppm	61	183	110	47	585	81
	Mn ppm	50	124	81	21	350	43
	Zn ppm	29	81	50	19	162	22
	Cu ppm	4	16	10	1	80	8
	B ppm	25	64	41	18	174	18
	Mo ppm	1.8	11.5	5.8	0.6	29.4	4.9
	Al ppm	0	185	82	9	949	122
Samples	291	**Locations**	10				

Phlox intensia	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	4.1	5.9	5.1	2.7	6.6	0.8
	P %	0.5	0.8	0.7	0.3	0.8	0.1
	K %	2.9	4.4	3.7	1.4	5.5	0.6
	Ca %	0.8	1.3	1.0	0.6	1.7	0.2
	Mg %	0.2	0.5	0.4	0.1	0.7	0.1
	S %	0.4	1.1	0.8	0.1	1.5	0.3
	Fe ppm	52	316	160	49	485	101
	Mn ppm	38	134	87	27	289	44
	Zn ppm	35	147	74	28	272	55
	Cu ppm	5	12	8	3	24	3
	B ppm	34	86	57	28	123	21
	Mo ppm	1.1	9.1	4.2	0.9	17.8	3.4
	Al ppm	0	161	64	11	438	83
Samples	85	**Locations**	5				

Poinsettia	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	4.0	5.4	4.8	3.2	6.3	0.6
	P %	0.4	0.6	0.5	0.3	0.9	0.1
	K %	2.1	3.7	2.9	1.8	4.3	0.5
	Ca %	0.5	1.4	0.9	0.5	1.8	0.3
	Mg %	0.4	0.8	0.6	0.3	1.0	0.1
	S %	0.2	0.3	0.2	0.1	0.5	0.1
	Fe ppm	87	227	152	59	337	63
	Mn ppm	130	435	271	96	539	115
	Zn ppm	21	55	38	15	66	13
	Cu ppm	4	26	11	4	46	10
	B ppm	23	37	30	21	48	5
	Mo ppm	4.1	8.4	6.1	3.8	23.2	3.2
	Al ppm	0	269	140	28	373	97
Samples	66	**Locations**	1				

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Salvia	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	3.9	5.8	4.8	3.5	6.2	0.7
	P %	0.2	0.5	0.3	0.2	0.7	0.1
	K %	2.4	4.0	3.2	2.2	4.9	0.6
	Ca %	0.6	1.3	0.9	0.6	3.1	0.4
	Mg %	0.4	0.8	0.6	0.3	1.1	0.2
	S %	0.4	1.1	0.6	0.2	1.3	0.3
	Fe ppm	67	224	126	58	345	69
	Mn ppm	34	185	80	30	292	64
	Zn ppm	27	66	45	21	108	17
	Cu ppm	5	25	11	4	39	8
	B ppm	30	67	48	25	119	17
	Mo ppm	1.8	12.7	5.8	1.4	15.2	4.1
	Al ppm	0	240	112	24	342	89
Samples	41	**Locations**	2				

Sanvitalia	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	3.9	5.3	4.8	3.9	7.9	1.0
	P %	0.5	0.9	0.6	0.4	1.1	0.2
	K %	3.2	5.1	4.1	3.2	5.4	0.7
	Ca %	0.7	0.9	0.8	0.6	1.1	0.1
	Mg %	0.2	0.6	0.4	0.2	0.6	0.1
	S %	0.4	0.8	0.6	0.2	0.8	0.1
	Fe ppm	89	152	109	88	160	21
	Mn ppm	46	142	90	42	173	36
	Zn ppm	50	145	93	36	218	48
	Cu ppm	5	14	7	4	15	3
	B ppm	34	75	56	26	101	19
	Mo ppm	1.2	10.0	4.5	1.2	17.4	4.3
	Al ppm	0	143	54	16	179	46
Samples	16	**Locations**	1				

Scaevola	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	3.7	5.6	4.6	3.4	6.3	0.8
	P %	0.3	0.8	0.5	0.2	1.1	0.2
	K %	3.1	4.4	3.7	2.1	5.5	0.6
	Ca %	1.3	2.3	1.8	1.0	3.4	0.4
	Mg %	0.2	0.7	0.4	0.2	0.8	0.2
	S %	0.3	1.5	0.9	0.1	2.6	0.5
	Fe ppm	62	127	94	47	392	48
	Mn ppm	65	220	107	31	276	56
	Zn ppm	24	62	40	4	86	16
	Cu ppm	2	15	7	1	43	7
	B ppm	30	55	43	25	98	13
	Mo ppm	1.5	10.1	5.3	0.1	23.9	5.0
	Al ppm	0	129	65	15	424	65
Samples	67	**Locations**	5				

Solenostemon	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	3.7	5.5	4.5	3.1	5.6	0.7
	P %	0.5	1.0	0.8	0.4	1.1	0.2
	K %	3.5	4.9	4.2	3.0	4.9	0.5
	Ca %	1.1	1.7	1.4	1.1	2.3	0.3
	Mg %	0.4	1.0	0.6	0.3	1.3	0.2
	S %	0.2	0.9	0.5	0.1	1.2	0.3
	Fe ppm	64	155	102	48	181	36
	Mn ppm	60	359	148	41	493	125
	Zn ppm	36	116	64	32	135	32
	Cu ppm	6	31	12	5	38	9
	B ppm	28	61	45	26	68	13
	Mo ppm	2.3	14.9	7.1	1.9	17.1	4.5
	Al ppm	0	259	108	18	273	90
Samples	20	**Locations**	1				

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Strobilanthus	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	2.7	3.9	3.5	2.7	3.9	0.4
	P %	0.4	0.5	0.4	0.3	0.5	0.1
	K %	2.1	2.9	2.6	2.1	3.5	0.4
	Ca %	1.7	2.8	2.1	1.7	2.8	0.4
	Mg %	0.8	2.0	1.5	0.8	2.0	0.4
	S %	0.3	0.7	0.4	0.3	0.7	0.1
	Fe ppm	45	132	75	45	132	35
	Mn ppm	56	100	72	34	100	16
	Zn ppm	32	57	42	25	57	10
	Cu ppm	3	6	4	2	6	1
	B ppm	48	152	86	48	152	39
	Mo ppm	2.0	16.5	5.6	2.0	16.5	5.1
	Al ppm	0	192	61	14	192	54
Samples	25	**Locations**	1				

Thunbergia	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	4.3	6.1	5.2	3.6	6.4	0.7
	P %	0.6	1.1	0.8	0.3	1.2	0.2
	K %	3.1	4.9	4.1	2.5	6.7	0.8
	Ca %	0.3	1.1	0.7	0.3	1.6	0.3
	Mg %	0.3	0.4	0.3	0.2	0.6	0.1
	S %	0.2	0.3	0.3	0.2	0.4	0.0
	Fe ppm	92	135	114	87	190	19
	Mn ppm	65	271	130	61	538	101
	Zn ppm	61	112	90	51	181	23
	Cu ppm	10	17	13	7	19	3
	B ppm	28	62	39	23	71	13
	Mo ppm	1.0	3.0	2.1	0.7	11.1	1.6
	Al ppm	0	77	38	11	128	26
Samples	48	**Locations**	2				

Torenia	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	2.9	4.8	3.9	2.6	5.1	0.6
	P %	0.4	0.6	0.5	0.3	1.3	0.1
	K %	1.8	3.4	2.6	1.3	7.8	0.9
	Ca %	0.3	0.6	0.5	0.2	3.1	0.4
	Mg %	0.2	0.6	0.4	0.2	1.0	0.2
	S %	0.2	0.6	0.4	0.1	0.8	0.2
	Fe ppm	78	179	124	58	345	52
	Mn ppm	56	215	118	44	383	73
	Zn ppm	32	73	52	19	193	25
	Cu ppm	6	14	11	3	74	10
	B ppm	36	91	61	32	129	22
	Mo ppm	1.8	7.5	4.3	1.2	10.7	2.3
	Al ppm	0	112	68	9	607	80
Samples	69	**Locations**	5				

Verbena	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	3.9	6.2	5.0	2.6	7.2	0.9
	P %	0.4	0.7	0.6	0.2	1.0	0.1
	K %	2.3	3.9	3.1	0.8	4.8	0.7
	Ca %	0.9	1.9	1.4	0.6	4.3	0.5
	Mg %	0.3	0.8	0.5	0.1	1.1	0.2
	S %	0.3	1.2	0.7	0.1	2.9	0.4
	Fe ppm	60	144	96	28	308	40
	Mn ppm	41	145	90	19	403	47
	Zn ppm	29	70	48	8	161	21
	Cu ppm	4	12	9	1	64	7
	B ppm	30	86	54	14	155	24
	Mo ppm	1.8	10.5	5.4	0.3	24.2	4.1
	Al ppm	0	114	58	9	490	57
Samples	229	**Locations**	9				

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QAL

Vinca	Nutrient	Low	High	Mean	Minimum	Maximum	Std Dev
	N %	3.7	6.0	4.9	2.8	6.6	0.8
Vinca major	P %	0.4	0.7	0.5	0.0	0.7	0.1
	K %	2.9	5.5	4.2	1.7	5.9	0.9
	Ca %	0.4	0.9	0.6	0.1	1.6	0.2
	Mg %	0.2	0.4	0.3	0.1	0.5	0.1
	S %	0.3	1.9	1.0	0.2	3.1	0.6
	Fe ppm	32	109	63	21	285	40
	Mn ppm	29	89	49	21	162	27
	Zn ppm	30	68	47	14	128	18
	Cu ppm	3	15	8	1	37	7
	B ppm	25	50	39	4	77	12
	Mo ppm	1.4	22.4	9.8	0.4	28.9	7.8
	Al ppm	0	142	55	5	301	62
Samples	60	**Locations**	4				