

Appendix M Using BCSR Soil Classification Tables

From over 2,000 soil tests from the northern California counties in the study area, approximately 500 were selected. Soils which were sampled during the earlier days of my work, or which were recent but not limed, are included. In this way the data generated represents near native conditions or long term trends from farming practices.

The soil analysis results are grouped according to nutritional Base Cation Saturation Ratio characteristics, which are reflections of parent material, our medium to high rainfall climate, and the clay contained therein. This system allows easy access to major characteristics of the soils, and identification of limiting factors and excesses which are important for well balanced, quality producing soils. This system could be applied anywhere in the world with access to a soils lab providing standard testing services. In our humid region, low calcium (< 65%) and low sodium (<5%) is the rule - the other groups can be formed by the magnesium and potassium levels. In arid areas, high or low sodium could be used as the major groups, with the relative levels of calcium, magnesium, then potassium as further divisions.

The data from all the different soils were located on the general soil maps in the USDA Soil Conservation Service Soil Surveys for each county. These show general soil groups, or associations, which are one or more major or minor soils in distinctive landscapes. This adds nutritional information to the engineering, textural, and other land use information found in the soil surveys.

One benefit of these tables is easy access to ranges of limestone requirements, how to address soil excesses and imbalances, and likely limiting factors. Ranges of potash requirements and micronutrient trends are also presented.

THESE TABLES ARE GENERAL GUIDELINES FOR INFORMATIONAL USE ONLY. HAVE YOUR OWN SOILS TESTED, INTERPRET THE RESULTS ACCORDING TO THE SYSTEM I HAVE OUTLINED, AND CONSULT YOUR FERTILIZER DEALER FOR THE BEST MATERIALS AND METHODS TO ACHIEVE YOUR GOALS.

Appendix N Northern California Soil Associations Lo Ca: Hi Mg: Hi K

SOIL ASSOCIATION	# of SAMPLES	pH	% O M	LOCATION	Ca 65-75%	Mg 10-15%	K 3-5%	Na 0-5%	% H	LIMESTONE REQUIREMENT	POTASSIUM REQUIREMENT
CONTRA COSTA											
Capay-Sycamore-Brentwood	6	6.6	1.8	valley fill & flood plains	V LO 58.2	V HI 28.5	HI 5.0	LO 2.4	6.0	2-4 T/AC-FT	XS-200 #/AC
LAKE											
Phipps-Bally	1	5.6	1.0	hills & mountains	V LO 49.4	HI 20.5	HI 5.7	V LO 1.0	23.5	1-2 T/AC-FT	XS
Millshoim-Skyhigh-Bressa	1	5.9	1.5	hills & mountains	V LO 55.4	HI 20.2	HI 7.0	V LO 0.4	17.0	2-3 T/AC-FT	XS
Glenwiew-Bottlerock-Arrowhead	14	6.4	2.6	volcanic hills	V LO 58.7	HI 19.8	V HI 10.3	V LO 1.0	9.0	0-5 T/AC Ft	XS-500 #/AC
MENDOCINO											
Pinole-Yokayo-Redvine	33	5.7	2.0	alluvial terraces	V LO 51.0	HI 16.8	HI 7.6	V LO 1.8	22.9	1-6 T/AC-FT	XS-500 #/AC
Yorkville-Yorktree-Squaw Rk	7	5.9	2.7	slopes & ridgetops	V LO 43.9	V HI 31.3	HI 5.1	V LO 1.6	16.8	1-12 T/AC-FT	XS-400 #/AC
Hopland-Yorkville-Witherell	14	5.9	2.0	uplands & hills	V LO 50.2	HI 19.4	MED 4.6	V LO 1.4	24.5	1-5 T/AC Ft	XS-550 #/AC
Casabonne-Holohan-Wohly	4	5.6	2.4	hills & mountains	V LO 46.9	HI 21.6	MED 4.8	LO 2.5	24.0	2-4 T/AC-FT	XS-0
Ornbaun-Zeni-Yellowhound	8	5.4	2.5	hills & mountains	V LO 41.0	HI 17.8	HI 5.4	LO 2.1	33.8	2-4 T/AC Ft	XS-200 #/AC
NAPA											
Maymen-Lodo-Felton	1	5.7	2.0	uplands & slopes	V LO 50.7	HI 19.6	HI 6.2	LO 2.5	21.0	1-2 T/AC-FT	XS
Rock Outcrop-Kidd-Hambright	12	6.0	2.9	hills & mountains	V LO 52.6	MED 14.6	HI 7.2	V LO 1.2	24.7	1-7 T/AC-FT	XS-150#/AC
SONOMA											
Goulding-Toomes-Guenoc	5	5.7	2.4	uplands & slopes	V LO 55.7	HI 16.3	HI 7.2	LO 1.3	17.1	1-7 T/AC-FT	XS
Goldridge-Cotati-Sebastopol	10	5.4	2.2	foothills & terraces	V LO 36.0	HI 18.8	V HI 12.2	V LO 1.0	34.5	1-4 T/AC-FT	XS

Appendix O Northern California Soil Associations Lo Ca: Hi Mg: Lo K

SOIL ASSOCIATION	# of SAMPLES	pH	% O M	LOCATION	Ca 65-75%	Mg 10-15%	K 3-5%	Na 0-5%	% H	LIMESTONE REQUIREMENT	POTASSIUM REQUIREMENT
CONTRA COSTA											
Capay-Rincon	3	6.2	1.0	valley fill	V LO 54.3	V HI 34.4	LO 2.4	LO 3.2	5.6	2-5 T/AC	50-750 #/AC
LAKE											
Tulelake-Fluvaquentic Haplaquolls	5	6.8	2.2	lake basins & marshes	V LO 50.2	V HI 40.6	LO 2.5	V LO 1.7	5.0	2-7 T/AC	250-300 #/AC
Still-Lupojoma	19	6.3	2.9	alluvial plains & flood plains	V LO 53.6	V HI 30.1	LO 2.5	V LO 1.1	11.3	0-10 T/AC	0-600 #/AC
MENDOCINO											
Cole	57	6.1	2.1	flood plains & alluvial fans	V LO 48.8	V HI 35.8	LO 2.3	V LO 1.1	16.1	1-7 T/AC	0-700 #/AC
Feliz-Russian	46	6.3	2.0	flood plains & alluvial fans	V LO 54.7	V HI 25.0	LO 2.4	V LO 1.3	16.0	1-12 T/AC	0-1000 #/AC
NAPA											
Bale-Cole-Yolo	35	6.2	2.7	flood plains, alluvial fans & terraces	V LO 48.1	V HI 26.2	LO 2.2	V LO 0.8	22.7	1-10 T/AC	0-750 #/AC
Tehama	3	6.3	2.8	flood plains & alluvial fans	LO 55.8	HI 19.1	LO 2.8	V LO 0.9	21.4	1-3 T/AC	20-250 #/AC
Reyes-Clear Lake Haire-Coombs	2	6.0	2.5	basins & terraces	V LO 51.8	MOD 15.4	V LO 1.3	V LO 0.6	30.8	2-4 T/AC	50-500 #/AC
SONOMA											
Clear Lake-Reyes	7	6.3	3.0	basins & tidal flats	V LO 35.7	V HI 33.2	V LO 1.3	V LO 1.0	28.8	5-20 T/AC	150-1250 #/AC
Haire-Diablo	2	6.5	3.0	terraces & uplands	V LO 35.7	V HI 33.2	V LO 1.0	V LO 1.4	18.8	6-8 T/AC	650-1000 #/AC
Yolo-Cortina- Pleasanton	40	6.1	1.8	flood plains, alluvial fans & low terraces	V LO 47.3	V HI 27.7	V LO 2.1	V LO 1.0	19.7	1-11 T/AC	50-1250 #/AC

Appendix P Northern California Soil Associations Lo Ca: Med-Hi Mg: Med K

SOIL ASSOCIATION	# of SAMPLES	pH	% O M	LOCATION	Ca 65-75%	Mg 10-15%	K 3-5%	Na 0-5%	% H	LIMESTONE REQUIREMENT	POTASSIUM REQUIREMENT
CONTRA COSTA											
Brentwood-Rincon-Zamora	14	6.0	0.9	valley fill, alluvial fans, & low terraces	V LO 50.6	V HI 27.5	MED 3.6	MED 4.2	14.1	1-3 T/AC-FT	0-600 #/AC
LAKE											
Cole-Clear Lake Varient	39	6.7	2.5	basins & lowlands	V LO 40.9	V HI 49.1	MED 4.4	V LO 0.6	5.2	1-15 T/AC-FT	XS-780 #/AC
Manzanita-Wappo-Forbesville	5	6.5	2.1	alluvial terraces	V LO 45.1	V HI 35.7	MED 4.5	LO 2.7	13.6	2-4 T/AC-FT	XS-600 #/AC
MENDOCINO											
Hopland-Squawrock-Witherell	16	5.5	1.8	uplands & slopes	V LO 43.1	V HI 21.4	MED 3.1	V LO 1.9	27.8	2-4 T/AC-FT	XS-600 #/AC
Boontling-Pinole-Cole	30	5.8	2.3	alluvial deposits	V LO 48.2	V HI 23.2	MED 3.3	V LO 1.8	24.0	1-5 T/AC-FT	XS-700 #/AC
NAPA											
Bressa-Dibble-Sobrante	5	5.8	2.3	uplands & slopes	V LO 46.9	V HI 30.8	MED 3.5	V LO 1.4	17.4	1-8 T/AC-FT	0-300 #/AC
Forward-Boomer-Felta	3	5.6	1.5	uplands & slopes	LO 53.2	HI 16.1	MED 3.1	LO 2.1	25.4	1-4 T/AC-FT	XS-100 #/AC
Forward-Aiken	4	5.8	2.4	uplands & slopes	V LO 40.6	V HI 29.5	MED 4.2	LO 1.4	24.4	2-6 T/AC-FT	XS-300 #/AC
SONOMA											
Huichica-Wright-Zamora	7	5.5	1.4	low bench terraces & alluvial fans	V LO 44.0	HI 21.2	MED 4.6	LO 2.6	28.1	1-12 T/AC-FT	XS-450 #/AC
Spreckels-Felta	14	5.6	2.5	foothills & terraces	V LO 41.1	MED 14.1	MED 4.2	V LO 1.1	39.5	1-8 T/AC-FT	XS-450 #/AC
Hugo-Josephine-Laughlin	3	5.2	2.9	mountains & ridges	V LO 42.1	HI 18.7	MED 3.0	V LO 1.8	34.5	2-3 T/AC-FT	200-550 #/AC

Appendix Q Northern California Soil Associations Lo Ca: Med-Lo Mg: Hi K

SOIL ASSOCIATION	# of SAMPLES	pH	% O M	LOCATION	Ca 65-75%	Mg 10-15%	K 3-5%	Na 0-5%	% H	LIMESTONE REQUIREMENT	POTASSIUM REQUIREMENT
CONTRA COSTA											
Delhi	3	4.8	0.9	valley sands	V LO 31.9	MED 13.4	MED 5.0	LO 1.1	4.8	2-4 T/AC-FT	XS-150 #/AC
LAKE											
Konocti-Benridge	5	6.4	2.7	hills & mountains	MED 64.4	MED 13.9	V HI 12.0	V LO 0.7	9.2	0-1 T/AC-FT	XS
MENDOCINO											
Maymen-Etsel-Snook	2	5.8	1.5	hills & mountains	V LO 46.7	LO 9.3	MED 4.8	V LO 0.9	38.2	2-3 T/AC-FT	XS-50 #/AC
Casabonne-Holohan-Wohly	3	4.9	2.5	hills & mountains	V LO 34.0	MED 11.0	V HI 8.9	LO 2.0	44.2	2-5 T/AC Ft	XS
Quinliven-Ferncreek-Shinglemill	6	5.4	2.5	coastal terraces	V LO 50.1	MED 15.7	MED 4.5	V LO 1.9	27.8	1-8 T/AC-FT	XS-240 #/AC
NAPA											
Rock Outcrop-Kidd-Hambright	12	6.0	2.9	uplands, slopes & mountains	V LO 52.6	MED 14.6	HI 7.2	V LO 1.2	24.7	1-7 T/AC-FT	XS-150 #/AC
SONOMA											
Kidd-Forward-Cohasset	2	6.3	1.5	uplands, slopes & mountains	LO 60.2	MED 14.4	V HI 10.1	V LO 1.3	14.2	3-7 T/AC-FT	XS
Empire-Caspar-Mendocino	3	4.9	2.6	coastal uplands & terraces	V LO 34.5	MED 13.3	MED 6.0	V LO 1.8	44.7	3-7 T/AC-FT	XS-200 #/AC