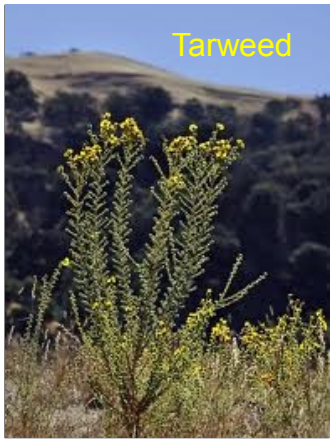
Range Drought Recovery
What to do if it rains

- Weed Control
- Reseeding
- Fertilization
- Water Quality

Weeds

- Less than 1500 lbs. of RDM
  - Guidelines for RDM YouTube Video
- Bare ground + Seed bank
- Maybe Poisonous Plants



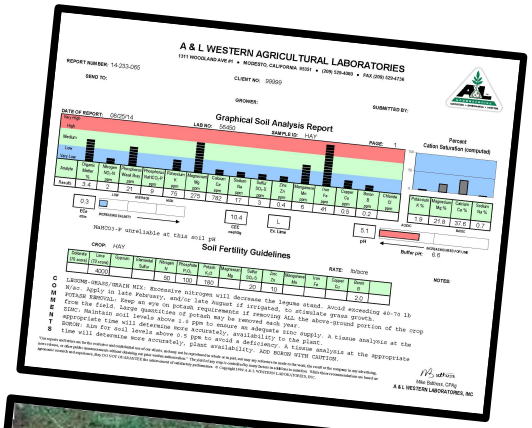
Control Methods

Only two real methods for fall

- Mechanical
  - Mow, Disk, Reseed
- Herbicidal
  - Mostly Broadleaf Control
  - 2,4-D, Milestone, Glyphosate
  - Reseed
  - http://sfrec.ucanr.edu/files/1

Reseeding

- Soil test & Fertilize If Needed
- Disking
- Broadcast vs. Drilled
- Seed Selection & Rates
  - Annuals vs. Perennials + Legumes
  - 20 to 25 lbs/a, 50:50 mix
- Timing
  - Oct 15 to Nov 15 up to Dec 15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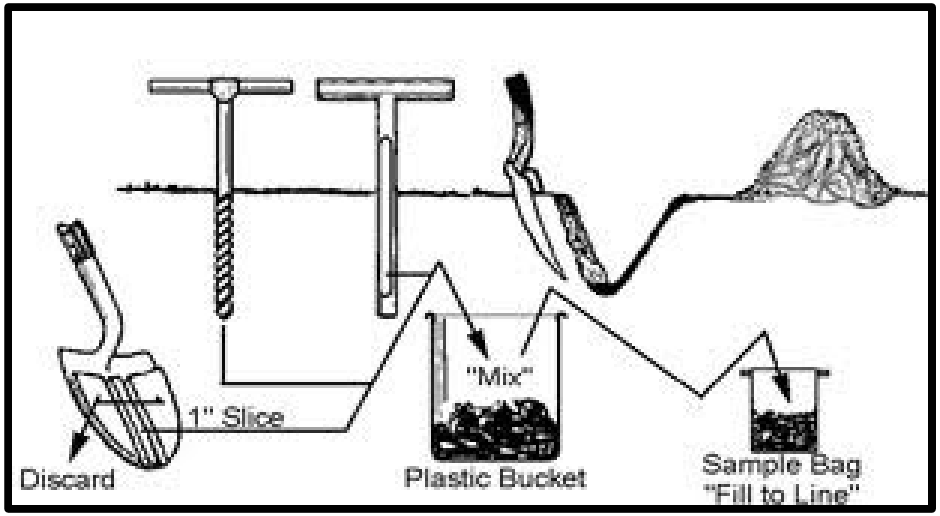
Graphical Soil Analysis Report

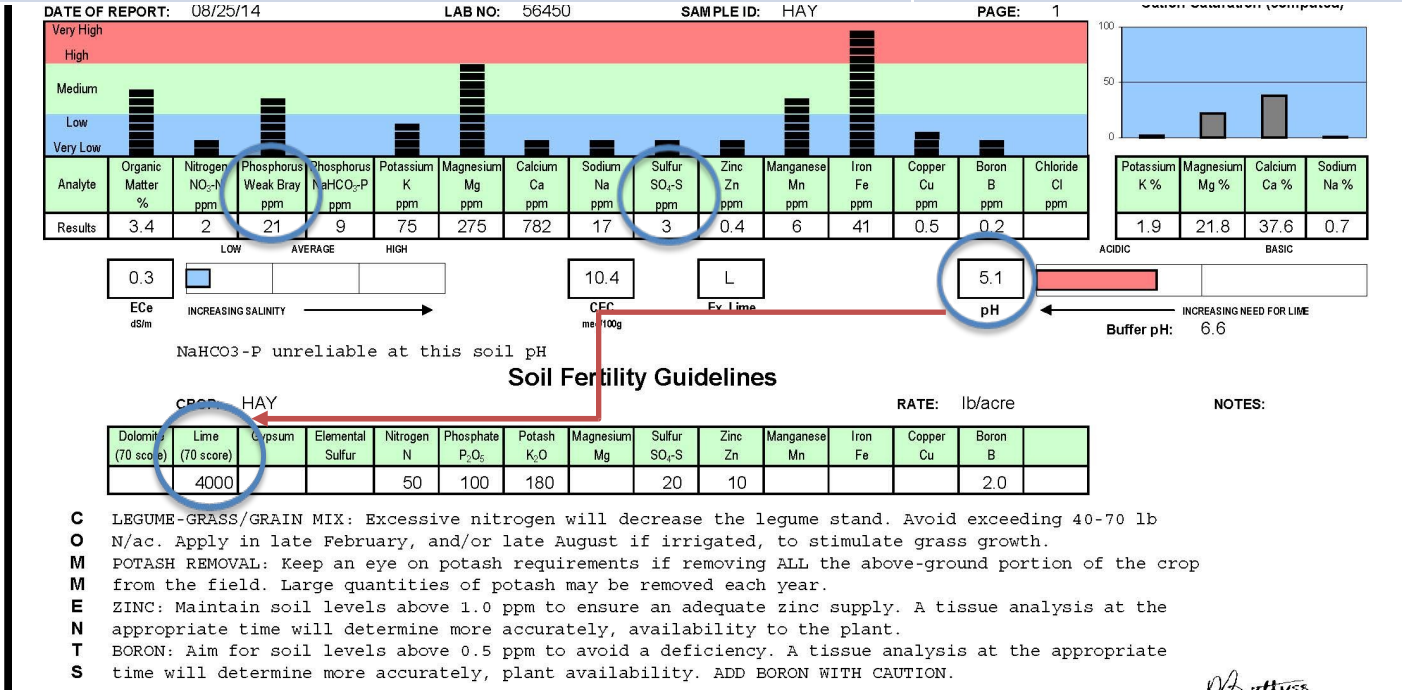
Soil Fertility Guidelines

Soil Sampling

- 20 to 40 Random Samples
- Composite Sample
- Paper Bag ⅔ to ¾ full
- Site ID & Contact Info
- Range or Pasture?



Phosphorus (P) Soil test level --------- **ppm** ---------	Amount of phosphate (P2O5) to apply
0 to 10	220 lbs/a
11 to 25	88 lbs/a
Over 25	44 lbs/a



DATE OF REPORT: 08/25/14 LAB NO: 56450 SAMPLE ID: HAY PAGE: 1

Very High / High / Medium / Low / Very Low

Analyte	Organic Matter %	Nitrogen NO_3-N ppm	Phosphorus Weak Bray ppm	Phosphorus $NaHCO_3$-P ppm	Potassium K ppm	Magnesium Mg ppm	Calcium Ca ppm	Sodium Na ppm	Sulfur SO_4-S ppm	Zinc Zn ppm	Manganese Mn ppm	Iron Fe ppm	Copper Cu ppm	Boron B ppm	Chloride Cl ppm
Results	3.4	2	21	9	75	275	782	17	3	0.4	6	41	0.5	0.2	
			LOW	AVERAGE	HIGH										

Potassium K %	Magnesium Mg %	Calcium Ca %	Sodium Na %
1.9	21.8	37.6	0.7

ACIDIC BASIC

0.3 ECe dS/m — INCREASING SALINITY

10.4 CEC me/100g

L Ex. Lime

5.1 pH — INCREASING NEED FOR LIME

Buffer pH: 6.6

NaHCO3-P unreliable at this soil pH

Soil Fertility Guidelines

CROP: HAY RATE: lb/acre NOTES:

Dolomite (70 score)	Lime (70 score)	Gypsum	Elemental Sulfur	Nitrogen N	Phosphate P_2O_5	Potash K_2O	Magnesium Mg	Sulfur SO_4-S	Zinc Zn	Manganese Mn	Iron Fe	Copper Cu	Boron B	
	4000			50	100	180		20	10				2.0	

COMMENTS

LEGUME-GRASS/GRAIN MIX: Excessive nitrogen will decrease the legume stand. Avoid exceeding 40-70 lb N/ac. Apply in late February, and/or late August if irrigated, to stimulate grass growth.

POTASH REMOVAL: Keep an eye on potash requirements if removing ALL the above-ground portion of the crop from the field. Large quantities of potash may be removed each year.

ZINC: Maintain soil levels above 1.0 ppm to ensure an adequate zinc supply. A tissue analysis at the appropriate time will determine more accurately, availability to the plant.

BORON: Aim for soil levels above 0.5 ppm to avoid a deficiency. A tissue analysis at the appropriate time will determine more accurately, plant availability. ADD BORON WITH CAUTION.

Sulfur (SO4-S) Soil test level	Amount of Sulfur (SO4-S) to apply
0 to 7.5	10 to 20 lbs/a

Multiple Sample Lab Results

A & L WESTERN AGRICULTURAL LABORATORIES

1311 WOODLAND AVE #1 • MODESTO, CALIFORNIA 95351 • (209) 529-4080 • FAX (209) 529-4736

REPORT NUMBER: 14-196-039

CLIENT NO: 555-D

SEND TO: ALPHA ANALYTICAL LABS
208 MASON ST
UKIAH, CA 95482-

SUBMITTED BY:

GROWER: #199996

DATE OF REPORT: 07/18/14

SOIL ANALYSIS REPORT

PAGE: 1

SAMPLE ID	LAB NUMBER	Organic Matter		Phosphorus		Potassium	Magnesium	Calcium	Sodium	pH		Hydrogen	Cation Exchange Capacity	PERCENT CATION SATURATION (COMPUTED)				
		*	**	P1 (Weak Bray)	$NaHCO_3$-P (Olsen Method)	K	Mg	Ca	Na	Soil	Buffer	H	C.E.C.	K	Mg	Ca	H	Na
		% Rating	ENR lbs/A	**** * ppm	**** * ppm	***** * ppm	*** * ppm	*** * ppm	*** * ppm	pH	Index	meq/100g	meq/100g	%	%	%	%	%
86-01	52718	7.6VH	182	26H	14L	125L	1318VH	1210VL	64L	6.3	6.7	2.0	19.5	1.6	55.5	30.9	10.5	1.4
86-02	52719	7.8VH	187	28H	14**	103L	1300VH	1003VL	26VL	6.0	6.7	2.8	18.9	1.4	56.5	26.5	15.0	0.6
86-03	52720	5.0H	130	28H	13**	125M	720VH	750VL	13VL	5.9	6.7	2.1	12.1	2.7	48.9	30.9	17.0	0.5
86-04	52721	5.2H	134	20M	27**	138M	860VH	807VL	12VL	5.8	6.7	2.7	14.2	2.5	49.8	28.4	19.0	0.4
86-05	52722	3.9H	108	65VH	22**	199H	486VH	667VL	30L	5.7	6.7	2.1	10.1	5.0	39.7	33.0	21.0	1.3

** $NaHCO_3$-P unreliable at this soil pH

SAMPLE NUMBER	Nitrogen NO_3-N	Sulfur SO_4-S	Zinc Zn	Manganese Mn	Iron Fe	Copper Cu	Boron B	Excess Lime	Soluble Salts	Chloride Cl		PARTICLE SIZE ANALYSIS			
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	Rating	mmhos/cm	ppm		SAND %	SILT %	CLAY %	SOIL TEXTURE
86-01	8L	8L	2.3M	15H	30VH	1.8H	0.7M	L	0.4L						
86-02	13M	6L	2.3M	22H	48VH	2.0H	0.6M	L	0.3L						
86-03	2VL	4L	2.7M	25H	65VH	2.3H	0.4L	L	0.3L						
86-04	2VL	5L	1.3M	34VH	64VH	2.4H	0.4L	L	0.3L						
86-05	5L	26H	3.6H	25H	88VH	2.2H	0.3VL	L	0.2VL						

* CODE TO RATING: VERY LOW (VL), LOW (L), MEDIUM (M), HIGH (H), AND VERY HIGH (VH).
** ENR - ESTIMATED NITROGEN RELEASE
*** MULTIPLY THE RESULTS IN ppm BY 2 TO CONVERT TO LBS. PER ACRE OF THE ELEMENTAL FORM
**** MULTIPLY THE RESULTS IN ppm BY 4.6 TO CONVERT TO LBS. PER ACRE P_2O_5
***** MULTIPLY THE RESULTS IN ppm BY 2.4 TO CONVERT TO LBS. PER ACRE K_2O
MOST SOILS WEIGH TWO (2) MILLION POUNDS (DRY WEIGHT) FOR AN ACRE OF SOIL 6-2/3 INCHES DEEP

This report applies only to the sample(s) tested. Samples are retained a maximum of thirty days after testing.

Mike Buttress, CPAg
A & L WESTERN LABORATORIES, INC.

Multiple Sample Lab Results Con't

A & L WESTERN AGRICULTURAL LABORATORIES
1311 WOODLAND AVE #1 • MODESTO, CALIFORNIA 95351 • (209) 529-4080 • FAX (209) 529-4736

REPORT NUMBER: 14-196-039 **CLIENT:** 5555

SUBMITTED BY:

SEND TO: ALPHA ANALYTICAL LABS
208 MASON ST
UKIAH, CA 95482-

GROWER: #99999

DATE OF REPORT: 07/18/14

SOIL FERTILITY GUIDELINES

RATE: lb/acre **PAGE:** 1

Sample ID	Lab Number	Crop	SOIL AMENDMENTS				Nitrogen N	Phosphate P_2O_5	Potash K_2O	Magnesium Mg	Sulfur SO_4-S	Zinc Zn	Manganese Mn	Iron Fe	Copper Cu	Boron B
			Dolomite	Lime	Gypsum	Elemental Sulfur										
86-01	52718	HAY		3000			30	70	180		20					
86-02	52719	HAY		3000			10	70	180		20					
86-03	52720	HAY		3000			40	70	150		20					0.5
86-04	52721	HAY		3000			40	100	150		20					0.5
86-05	52722	HAY		3000			40		90		10					1.0

COMMENTS

HIGH levels of organic matter should have a beneficial effect on growth and "soil" pH may not be as critical. However, watch carefully as amendments and extra nitrogen may still be necessary.
WHERE both soil pH and phosphorus are low, consider mixing equal amounts of superphosphate and lime and "cure" for a week. Then drill the mixture in contact with the seed.
LEGUME-GRASS/GRAIN MIX: Excessive nitrogen will decrease the legume stand. Avoid exceeding 40-70 lb N/ac. Apply in late February, and/or late August if irrigated, to stimulate grass growth.
HAY PRODUCTION may require about 50 lb nitrogen per ton of hay produced if under grain/grass; less if a mixed stand containing legumes.
BORON: Aim for soil levels above 0.5 ppm to avoid a deficiency. A tissue analysis at the appropriate time will determine more accurately, plant availability. ADD BORON WITH CAUTION.

NOTES:

Mike Buttress, CPAg
A & L WESTERN LABORATORIES, INC.

Formulas: How much to apply?

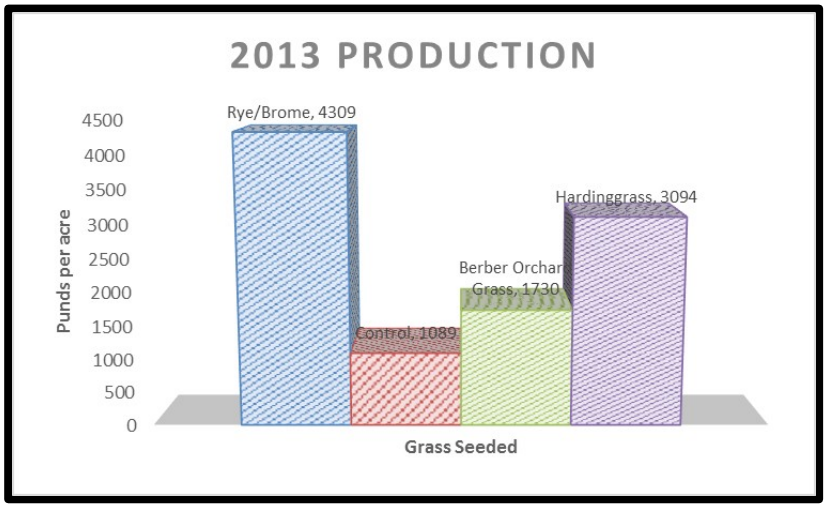
- What the formula means
  - 16-48-0-20, 11-52-0, 0-45-0
  - % Nitrogen, %Phosphorous as P2O5, %Potassium and %Sulfur
- Nutrient need in pounds / (% nutrient in analysis/100)= pounds of material
- *Example:* How many pounds of 11-52-0 are needed for 50 pounds of P2O5 recommendation?
  - 50 / 0.52 = 96 pounds of 11-52-0

Fertilizer Benefits

- Increased yield up to 60%
- Impact lasts up to 4 years
- ⬇ summer annual weeds (Mh & GG)
- ⬆ palatability, ⬆ protein, phosphorous
- With N, legumes ⬇ first year
  - Legumes increase there after
- Pick the easy sites!

Seed Choices

- Dryland Range
- Annuals
  - Ryegrass, Fescue, Brome
  - Subterranean Clovers
- Promising Perennials
  - Luna wheatgrass, ***Flecha fescue***, Anderson blue wildrye, and Hardinggrass Advanced AT
  - Should be planted with a clover
  - Defer grazing for 2 years



Water Quality

- Do a sediment inventory
- Roads account for more than 80% of sediment on North Coast
- Check the culverts!

RANGELAND MONITORING SERIES Publication 8014

Sediment Delivery Inventory and Monitoring

A Method for Water Quality Management in Rangeland Watersheds

Solutions for California

PRACTICAL | CONNECTED | TRUSTED

UC Cooperative Extension

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Agriculture and Natural Resources

Other Weeds


Bedstraw


Fiddleneck


Pineapple weed


Common Groundsel
UC Statewide IPM Project
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Hyssop loosestrife


Field bindweed