

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

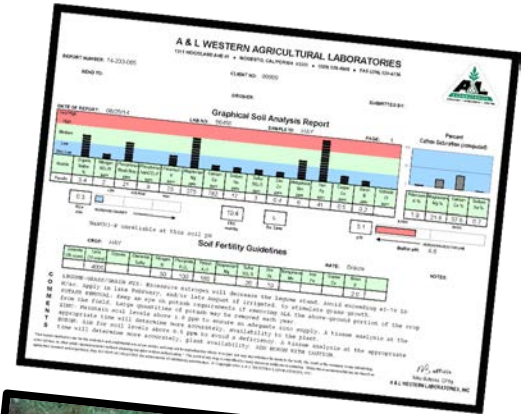
Only two real methods for fall

- Mechanical
 - Mow, Disk, Reseed
- Herbicidal
 - Mostly Broadleaf Control
 - 2,4-D, Milestone, Glyphosate
 - Reseed
 - <http://sfrec.ucanr.edu/files/179218.pdf>



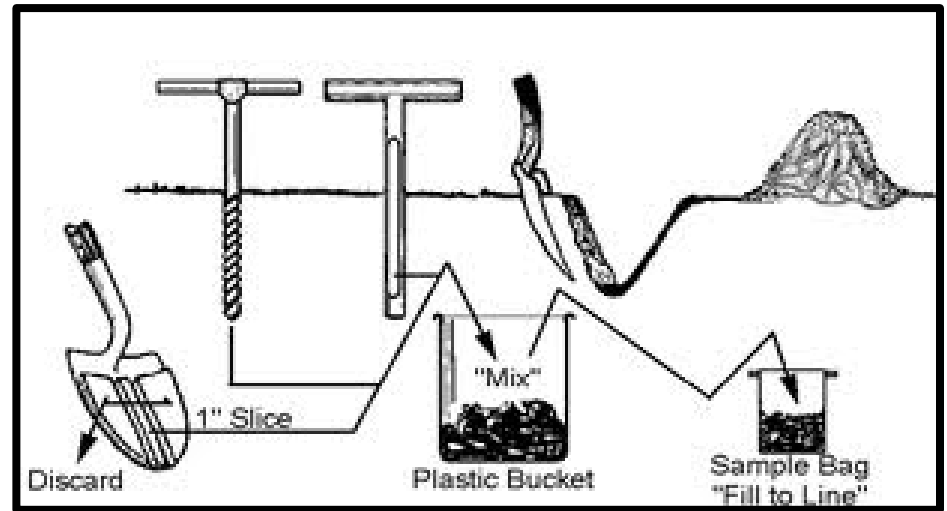
Reseeding

- 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

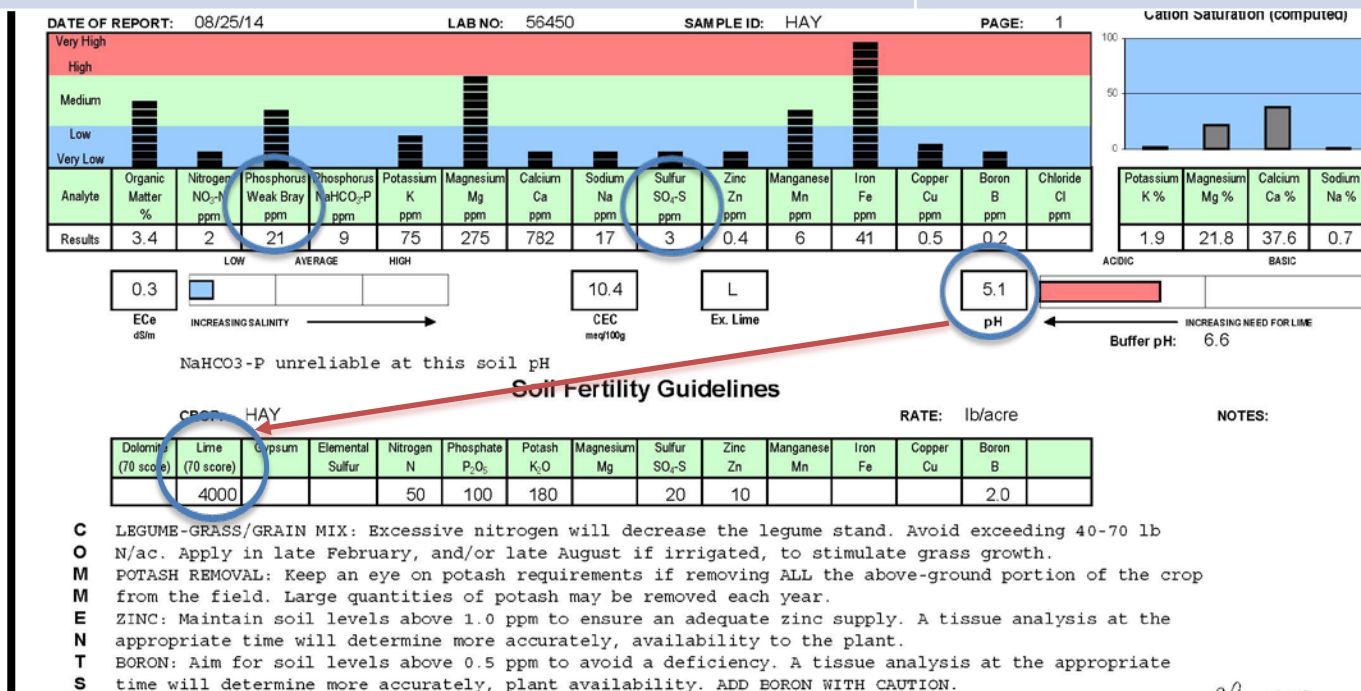


Soil Sampling

- 20 to 40 Random Samples
- Composite Sample
- Paper Bag $\frac{2}{3}$ to $\frac{3}{4}$ full
- Site ID & Contact Info
- Range or Pasture?



Phosphorus (P) Soil test level ----- ppm -----	Amount of phosphate (P ₂ O ₅) to apply
0 to 10	220 lbs/a
11 to 25	88 lbs/a
Over 25	44 lbs/a



Sulfur (SO₄-S) Soil test level

Amount of Sulfur (SO₄-S) to apply

0 to 7.5

10 to 20 lbs/a



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Multiple Sample Lab Results

A & L WESTERN AGRICULTURAL LABORATORIES

1311 WOODLAND AVE #1 • MODESTO, CALIFORNIA 95351 • (209) 529-4000 • FAX (209) 529-4736



REPORT NUMBER: 14-196-039

CLIENT NO: 555-D

SUBMITTED BY:

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

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)				
		%	ENR	P1	nanCO ₃ -P	K	Mg	Ca	Na	Soil pH	Buffer Index	H meq/100g	C.E.C. meq/100g	K %	Mg %	Ca %	H %	Na %
		Rating	lbs/A	(Weak Bray)	(Olsen Method)	ppm	ppm	ppm	ppm									
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

** NaHCO₃-P unreliable at this soil pH

SAMPLE NUMBER	Nitrogen	Sulfur	Zinc	Manganese	Iron	Copper	Boron	Excess Lime	Soluble Salts	Chloride	PARTICLE SIZE ANALYSIS			
	NO ₃ -N	SO ₄ -S	ppm	Mn	Fe	Cu	B	Rating	mmhos/cm	Cl	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 P₂O₅

***** MULTIPLY THE RESULTS IN ppm BY 2.4 TO CONVERT TO LBS. PER ACRE K₂O


MOST SOILS WEIGH TWO (2) MILLION POUNDS (DRY WEIGHT) FOR AN ACRE OF SOIL 6-23 INCHES DEEP

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

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

Multiple Sample Lab Results Con't

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REPORT NUMBER: 14-196-039 **CLIENT:** 5555 **SUBMITTED BY:**
SEND TO: ALPHA ANALYTICAL LABS **GROWER:** #99999
 208 MASON ST
 UKIAH, CA 95482-

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 ₂ O ₅	Potash K ₂ O	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

NOTES:
C 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.
O WHERE both soil pH and phosphorus are low, consider mixing equal amounts of superphosphate and lime
M and "cure" for a week. Then drill the mixture in contact with the seed.
M LEGUME-GRASS/GRAIN MIX: Excessive nitrogen will decrease the legume stand. Avoid exceeding 40-70 lb
E N/ac. Apply in late February, and/or late August if irrigated, to stimulate grass growth.
N HAY PRODUCTION may require about 50 lb nitrogen per ton of hay produced if under grain/grass; less
T if a mixed stand containing legumes.
S 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.

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

Formulas: How much to apply?

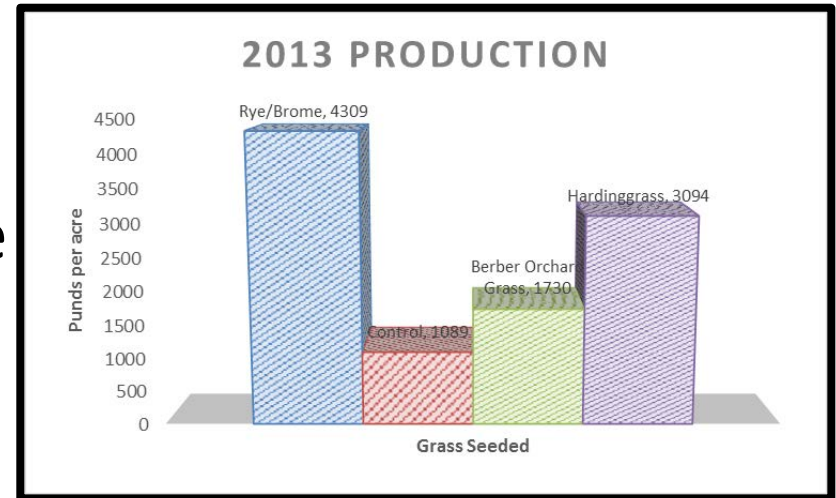
- What the formula means
 - 16-48-0-20, 11-52-0, 0-45-0
 - % Nitrogen, %Phosphorous as P_2O_5 , %Potassium and %Sulfur
- Nutrient need in pounds / (% nutrient in analysis/100)= pounds of material
- *Example:* How many pounds of 11-52-0 are needed for 50 pounds of P_2O_5 recommendation?
 - $50 / 0.52 = 96$ 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!



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Other Weeds

