SOIL TESTING LABORATORY
Utah State University UMC 48
Logan, Utah 84322

SOIL TEST REPORT
and
FERTILIZER RECOMMENDATIONS

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LABORATORY REPORT

7185

Lab. No.	Sample No.	Crop	Soil Texture (Estimated)	Lime	pH	Soluble Salts EC_e	Organic Matter %	Plant Nutrient Index: Nitrate ppm N	Phosphorus ppm P	Potassium ppm K	
473	1	grass	Sandy Clay	+	7.8	5.2			1.2	>320	Fluor 2" 75/76
474	2	"	Sandy Clay	+	7.8	5.6			.1	89	Roadside 6" 68
475	3	"	Sandy Clay	+	8.4	7.4			1.2	>320	Fluor 6"
476	4	"	Sandy Clay	+	7.5	9.1			.6	84	Blue Chalk 2" 72
477	5	"	Sandy Clay	+	8.1	4.0			1.1	83	Roadside 2"
478	6	"	Sandy Clay	+	8.1	2.7			.6	75	Blue Chalk 6"

ATTENTION GROWERS

These fertilizer recommendations are based on the soil analysis results, the information you supplied on the Description sheet, and on the average growing season for your area. They are guides developed from the best available scientific data, but may require some modification for your specific situation. Consult your Extension Agent for more details.

Remember that a high yield goal can be attained only when proper fertilization is used in combination with crop production management and climatic conditions consistent with that yield goal.

USU POLICY

It is the policy of the USU Soil Testing Laboratory to recommend only those nutrients that offer a reasonable possibility of increasing the yield of your crops, and in those amounts that should be necessary to achieve your yield capability. Ranges of nutrients are sometimes given, to permit some farm operator judgement.

FERTILIZER RECOMMENDATIONS FOR 19 77 CROP

Sample No.	Pounds of Nutrient per acre: Nitrogen (N)	Phosphorus (as P_2O_5)	Potassium (as K_2O)	Other	* Special Notes

*See referenced notes on the back of this sheet for explanations and special instructions.

Lime is present in all samples. Salt will likely affect germination in all samples exept possibly No.6. Plant salt-tolerant varieties. pH and high salt together indicate a probable sodium problem (poor infiltration rates, possible toxicity to some varieties). Phosphorus is extremely deficient and will be required--at least 100 lbs. P_2O_5/acre.

Potassium is very high in 1 &3 probably OK in the others. Some N will be needed: 35-50 lb N/acre, depending on available moisture.

NOTE 1 NITROGEN (N)

Standard topsoil samples alone are not tested for N. Results are often very misleading unless accompanying subsoil samples (to 36 inches or deeper) are obtained and tested at the same time. See special sampling instructions for N.

Fertilizer N can be lost through leaching under conditions of excess irrigation or rainfall. Its management is therefore of special importance. In cases of high N rates, sandy soils, or long-season crops, split applications will increase plant use of the fertilizer N, avoid late season deficiency, and reduce leaching losses. For annual crops, split applications of N also offer the opportunity to adjust the rate during the season according to the yield prospect.

Fall application of N is feasible on medium to heavy soils in areas of low to moderate rainfall.

1a. Sugar Beets Plow down all P and K and most or all of the N. Apply all N before July 1. Utilize manure for other crops in the rotation rather than for beets. Manure and alfalfa residue release N late in the season (undesirable for beets).

1b. Irrigated Small Grains Recommendations are for standard varieties. For stiff-straw dwarfs such as Gaines, N may be increased up to 50%. If the grain is used as a nurse crop for new alfalfa, do not use over 50 lbs. of N per acre.

1c. Pasture and Meadows Split N applications help to maintain yield and protein content throughout the season. Half of the year's application can be done in the fall if it is watered in immediately or injected directly into the sod (early spring application is also effective). The second half can be broadcast after the first cutting in the spring just before irrigating. Do not apply more than 75 lbs. of N at one time.

Mixed legume-grass pastures containing more than 1/3 legume probably will not benefit from added N.

1d. Alfalfa There is no indication that N will increase yield or quality of alfalfa.

NOTE 2 PHOSPHORUS (P) and POTASSIUM (K)

Plowdown or band applications are preferred for all annual crops. For established perennial crops such as alfalfa and pasture, topdressing in the fall is best.

Excessive rates of P fertilization can reduce the availability of zinc and iron, which could reduce the yield of sensitive crops.

Subsoil P and K levels can affect crop responses to fertilizer P or K.

Some irrigation waters carry appreciable amounts of K.

2a. The soil test P is very low for this sample. The amount of P recommended is for crop need plus substantial buildup for future crops. Test again after 2 years.

2b. Soil test P is low. P recommended is for crop need plus moderate buildup.

2c. Soil test P is medium. P recommended is for current crop need.

2d. Soil test K is low to medium. The amount recommended is for crop need plus buildup.

NOTE 3 DRYLAND PRODUCTION

Response to fertilizer on drylands is highly dependent on available moisture. Fall applications are usually most effective.

Phosphate must be incorporated into the soil by tillage or drilled with the seed.

Nitrogen applied broadcast prior to planting should be incorporated by tillage as soon as possible.

Spring applications of nitrogen can be made on unfrozen soil in March or early April, when the probability of rain is highest.

In years of exceptionally good soil moisture, apply the highest amount of N within the range given. In average years, amounts toward the middle of the range are preferred.

NOTE 4 MICRONUTRIENTS

Utah soils are generally well supplied with micronutrients. In field crops, zinc deficiency has been identified in corn in a few areas. Iron deficiency is widespread in certain ornamentals and some orchards through out the state, and is a frequent problem in sorghum in Washington County.

Heavy applications of manure can cause iron deficiency in sensitive plants.

Iron deficiencies occur most often in wet soils high in lime. Excessive P or overwatering may aggravate the problem.

Soil application of inorganic iron compounds such as iron sulfate is not effective in Utah soils. Iron chelates vary in effectiveness, Fe EDDHA or Fe 138 being the best tested so far. Plant deficiencies may be corrected by spraying foliage with iron sulfate solution, repeating as necessary if symptoms persist.

In-season zinc deficiency may be corrected by spraying the crop with zinc sulfate solution.

Consult qualified dealers for details of application methods.

4a. The soil test for zinc is low for your crop. Band or plow down about 10 lbs. of Zn per acre (30 lbs of zinc sulfate - 36% Zn).

4b. Soil test zinc is marginal. Apply 5 lbs. or zinc per acre.

4c. The soil test indicates adequate zinc.

4d. The soil test for iron is low for your crop. Apply chelate to soil or solution to foliage.

4e. The soil test for iron is marginal for your crop. Watch for crop symptoms.

4f. The soil test indicates adequate iron.

NOTE 5 SALT and SODIUM

If "5a" or "5b" is entered in the table above, the sample has a real or potential salt and/or sodium problem as follows:

5a. The sample shows a slight to moderate accumulation of salt. If drainage is adequate, applying an excess of good quality water can reduce salts to an acceptable level for this crop.

5b. The sample shows a high accumulation of salt and/or sodium and will probably require special treatment before fertilizers are applied. Consult local USU Extension staff or Soil Conservation Service for assistance.

NOTE 6 TREES

Soil tests have not been correlated with fertilization of trees in Utah. See "Fertilization of Fruit Crops" Extension Leaflet 106 for general instructions.