



# SOIL TEST REPORT

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County: Clay

Lab Number: 213522

## Mellicham SOIL TEST RESULTS and RATINGS

(Pounds Per Acre)

Sample Number	Water pH	Buffer Value	P Phosphorus	K Potassium	Ca Calcium	Mg Magnesium	Zn Zinc	Cu Copper	Fe Iron	Mn Manganese	Organic Matter %	Soluble Salts PPM**
1	5.6	7.5	52 H	195 H								

## RECOMMENDATIONS

Sample Number	Crop	Fertilizer/Lime Application Rate and Timing
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1 Grass-Clover Pasture a. Estab./Renovation

N/P<sub>2</sub>O<sub>5</sub>/K<sub>2</sub>O

Nitrogen/Phosphate/Potash: 30 / 30 / 30 pounds per acre

Limestone: 2 tons per acre

Each pasture sample has two recommendations. The first should be used for establishment of new crops or to renovate an existing crop. The second should be used for maintenance of an existing crop. For future maintenance of the new or renovated crop, use the second recommendation omitting the lime recommendation until the field is re-tested.

If renovation involves the addition of legumes to grass pastures, the nitrogen should be omitted.

1 Grass-Clover Pasture b. Maintenance

N/P<sub>2</sub>O<sub>5</sub>/K<sub>2</sub>O

Nitrogen/Phosphate/Potash: 0-90 / 0 / 0 pounds per acre

Limestone: 2 tons per acre

The nitrogen should be omitted on pastures containing more than 30 percent clover in the spring, otherwise if clover is less than 30 percent of the pasture apply 30 pounds of nitrogen per acre between March 1-30. For fall stockpiling of fescue apply 60 pounds of N per acre August 15 to September 15 to all fescue-clover mixtures.

Apply recommended amounts of phosphate and potash in one application anytime during the year. If more than 4 tons of lime per acre are required, apply only 4 tons of lime per acre and re-test after one year.

*Lime*

*Tony Kraatz*

*445-7761*

*Stormy Halsell*

*498-2385*

*Donald Reid*

*498-2492*

\*Ratings: Indicates relative availability of nutrients to plants. (See back of this form for detailed explanation.)

\*\*PPM = Parts per Million

If you have questions about these recommendations, contact your County Extension office.

Visit our website at <http://bioengr.ag.utk.edu/soiltestlab> for additional information.

100# 20 Bags Resque 10 24 24 20 Bags 50# Bags  
9# Ladins Clover (18000 wheat)

## Explanation of Soil Test Recommendations

Recommendations in this report are based upon research data collected under various soil conditions and cropping systems from locations throughout the state by the University of Tennessee Agricultural Experiment Station and Agricultural Extension Service personnel.

### Soil Test Ratings - Phosphorus and Potassium

**LOW (L):** Means that in most cases, plants will respond to the application of that nutrient. If the nutrient is not applied, deficiency symptoms may occur and crops usually yield less than 75 percent of their potential. **MEDIUM (M):** Means that plants may or may not respond to the application of that nutrient. Deficiency symptoms are not likely and soils can be expected to produce 75 percent or more of their potential without the application of the nutrient. **HIGH (H):** The soil will produce at or near 100 percent of its potential without the addition of the nutrient. Amounts recommended are primarily to maintain present soil test levels. **VERY HIGH (V):** Supply of the nutrient in the soil is well in excess of the amount needed to produce 100 percent of the soil's potential. Application of the nutrient is not recommended since further additions may create nutrient imbalances.

SOIL TEST RATINGS IN POUNDS PER ACRE PHOSPHORUS AND POTASSIUM

Rating	Phosphorus (P)	Potassium (K)
Low (L)	0-18	0-90
Medium (M)	19-30	91-160
High (H)	31-120	161-320
Very High (V)	120 +	320 +

### Soil Test Ratings - Secondary and Micronutrients

**SUFFICIENT (S):** Indicates an adequate supply of the nutrient is available in the soil and a plant response to its use would not normally be expected. **DEFICIENT (D):** Indicates an inadequate supply of the nutrient is in the soil and application of the nutrient is recommended.

### Soil Test Ratings - Soluble Salts

The soluble salts test rating refers to the potential for harmful effects due to the concentration of total soluble salts present in the soil. Soluble salt levels should be in the very low to low range. Higher levels may indicate over fertilization or a poor drainage situation which allows for accumulation.

### Applying the Fertilizer

Proper fertilization is only one aspect of good plant growth. Thus, to obtain the best results from the enclosed soil test recommendations, all recommended crop production practices should be followed. Recommended amounts of fertilizer nutrients should be applied uniformly. Nitrogen should be applied just prior to seeding the crop, as a sidedress application, or both. Phosphate and potash may be applied in the fall or spring if the soil pH is properly adjusted and soils are not subject to severe erosion or flooding. Banding a small amount of fertilizer at planting is desirable for some crops on low testing soils. Micronutrients should be applied where recommended at planting.

### Lime Recommendations

Although fall is an excellent time to apply limestone, it may be applied prior to establishing the crop. Apply 2,000 pounds of agricultural (ground) limestone, or 1,500 pounds hydrated lime (calcium hydroxide), or 1,100 pounds of burned lime (calcium oxide), or 2,800 pounds of basic slag for each ton of lime recommended.

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## Pond Sealing or Lining (No.)

### Bentonite Sealant

(552), irrigation storage reservoirs (436), ponds (378), waste treatment lagoons (359), waste storage ponds (425), or wildlife watering facilities (648), as appropriate.

**Soil properties.** Sealing with bentonite or similar materials is more applicable on coarse-grained soils where more than half of the soil material is larger than that passing the No. 200 sieve size.

**Rate of application.** The rate of application shall be based on laboratory tests unless sufficient data are available on the field performance of previously tested soils that are similar in texture and chemical properties to the soils to be sealed.

In the absence of laboratory tests or field performance data on the soils to be sealed, the minimum application shall be:

#### Definition

Installing a fixed lining of impervious material or treating the soil in a pond mechanically or chemically to impede or prevent excessive water loss.

#### Scope

This standard pertains to the sealing of ponds with bentonite or similar high swell clay materials.

#### Purpose

To reduce seepage losses in ponds to an acceptable level.

#### Conditions where practice applies

This practice applies where water loss from a pond through leakage is or will be of such proportion as to prevent the pond from fulfilling its planned purpose or where leakage will damage land and crops or cause waste of water or environmental problems.

#### Design criteria

Ponds to be sealed shall be constructed to meet SCS standards for irrigation pits or regulating reservoirs

Pervious soil	Application method	Application rate <i>lb/ft<sup>2</sup></i>
Clay .....	Mixed layer	1.0—1.5
Sandy silt .....	Mixed layer	1.0—1.5
Silty sand .....	Mixed layer	1.5—2.0
Clean sand .....	Mixed layer	2.0—2.5
Open rock or gravel .....	Clay or sand mixed layer	2.5—3.0

**Thickness of treated blanket.** The minimum thickness of the finished treated blanket shall be 4 in. for water depths up to 8 ft. Additional thickness shall be provided for greater water depths and for areas subject to wave action.

#### Plans and specifications

Plans and specifications for sealing ponds with bentonite shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose.

0.15 / 1.6  
 50# BA<sub>9</sub> / 6.00

## Pond Sealing or Lining

### Bentonite Sealant Specifications

Application shall be as follows:

1. The area to be treated shall be drained and dried.
2. All vegetation, trash, stones, and other objects large enough to interfere with the operation shall be removed.
3. Holes shall be filled.
4. Sealing material shall be distributed evenly over the surface.

5. For mixed layers, the material shall be thoroughly mixed to the specified depth with disk, rototiller, or similar equipment.

6. Each treated layer shall be compacted to a dry density of 90 percent or more of maximum standard Proctor with soil at optimum moisture content.

7. Treated areas shall be protected from puncture by livestock trampling. Areas near the waterline and at points of concentrated surface flow into the pond shall be protected against erosion.

Applications shall be carried out in such a manner that erosion and air and water pollution are minimized. The completed job shall present a workman-like finish.