WEB SERVICES at soils.rs.uky.edu

Training for County Extension Offices on UK Soil Laboratory Services

Division of Regulatory Services

January, 2004

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Contents:

County Gate
Forms
SoilData Programs and Training Material
Calculators
Soil Test Summaries
Mission
Help citizens in Kentucky maintain productive and economical plant growth operations by offering tests on soils, water, greenhouse media, animal waste, and mine spoils; with subsequent fertilizer and lime recommendations.

Introduction
Chemical tests are offered on media utilized for plant growth operations such as soils, water for tobacco float-beds, greenhouse media, and animal waste. Chemical analyses and recommendations from the University of Kentucky (UK) Agricultural Testing Labs are specifically made for Kentucky conditions. Nutrient needs and fertilizer responses are determined by research conducted through the UK College of Agriculture on crops and soils in Kentucky.

Locations
The University of Kentucky operates agricultural testing labs at Lexington and Princeton. The Lexington lab performs the routine soil test (pH, buffer pH, P, K, Ca, Mg, Zn) and non-routine tests which include boron, organic matter, and triazine residue in soil, pH and nutrients in greenhouse media used for various horticultural crops, pH and nutrients in water used for irrigation and nutrient solution purposes, nutrients in animal waste used for land application, and potential acidity in mine spoil. The Princeton lab performs the routine soil test.

Contact Information: Frank Sikora (Soil Test Coordinator), phone: 859-257-2785, email: fsikora@uky.edu. Author of ASP & javascript applications (fertilizer calculator, database applications): Zhiqiang Yu, zyu0@uky.edu.
This is the gateway to data specific to each county extension office. Log in to the county data using the county User Name and Password. If you do not know your User Name and Password, email Zhiqiang Yu (zyu0@uky.edu) and he will email you this information.

At this site you will find:

- Your county office contact information on file with the Soils Lab. Please update this information on the web when it changes.
- An order form for ordering soil test supplies and a record of past orders submitted.
- A record of samples received and tested in both Lexington and Princeton Labs.

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WELCOME, FAYETTE

Lexington Soil Data Information
Order Soil Supplies from Lexington
View Past Soil Supply Orders
Update Address Information

Princeton Soil Data Information
Order Soil Supplies from Princeton
# ORDER FORM FOR SUPPLIES

**Ship To:** FAYETTE  
**Street Address:** 1140 RED MILE PLACE  
**City:** LEXINGTON  
**State:** KY  
**Zip:** 40504  
**County Code:** 67

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Item</th>
<th>Order in Multiples of</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Soil Sample BOXES, 1 pint (From Princeton only)</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Soil Sample BAGS, 1 pint (From Lexington only)</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Mailing Cartons, 6 samples per carton</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Mailing Cartons, 18 samples per carton</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Greenhouse &amp; Container Nursery Info. Sheet</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Surface Mining or Mined Area Info. Sheets (brown)</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Animal Waste Sample Bottle (for liquids only) (use plastic bag for solids)</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Water Source &amp; Nutri. Solution Sample Bottle (smaller than bottle for animal waste)</td>
<td>1</td>
</tr>
</tbody>
</table>

Agricultural Soil Sample Info. Sheets ([Print from web](#))  
Home Garden, Lawn & Special Turf Info. Sheets ([Print from web](#))  
Commercial Horticulture Info. Sheet ([Print from web](#))  
Research Soil Sample Info. Sheet ([Print from web](#))  
Animal Waste Sample Info. Sheet ([Print from web](#))  
Water Source & Nutrient Solution Sample Info. Sheet ([Print from web](#))

We have run out of some sample information forms. You can print these forms from the web by clicking on (Print from web) above or [Go to All Forms](#).

[Back to Welcome Page](#)
Update Address Information

Office Name: FAYETTE
Agent Contact: CANDACE HARKER
Street (Shipping Supplies): 1140 RED MILE PLACE
City: LEXINGTON
Phone: 859-257-5582
Email for Reports: srsmith@uky.edu
Email for Billing: srsmith@uky.edu

Clerical Contact: Suzann R. Smith
P.O. Box: 
State: KY
Zip: 40504

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Sample Information Forms

Agricultural Soil Sample (A form)

Home, Lawn and Garden Soil Sample (H form)

Commercial Horticultural Soil Sample (C form)

Mine Spoil Soil Sample (M form)

Greenhouse and Container Nursery Media Soil Sample (G form)

Water and Nutrient Solution (W form)

Animal Waste Sample (AW form)

Research Form (R form)

Contact Information: Frank Sikora (Soil Test Coordinator), phone: 859-257-2785, email: fsikora@uky.edu. Author of javascript applications (fertilizer calculator, database applications): Zhiqiang Yu, zyu0@uky.edu.
<<< SoilData

Programs

SoilData and miscellaneous utility programs to be used with SoilData can be downloaded here.

Training

Material prepared for the training sessions on the SoilData program and the UK Soil Testing web site held from July 2001 through January 2002.

Memos

Memos regarding the use of the SoilData program.

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How to work offline  Saving all calculators  Copyright Protection

<<< Calculators

One Fert  This calculator determines the application rate of one fertilizer given a set of soil test recommendations for nitrogen, phosphate, and potash. The nutrient from which calculations are made is selected and the deficit or surplus of the other nutrients are calculated.

Mult Fert  This calculator determines the application rate of up to three fertilizers given a set of soil test recommendations for nitrogen, phosphate, and potash. The calculator will determine the best rates for the fertilizers selected to match the recommendations entered. Deficits or surpluses from the recommendation rates are reported.

Econ Lime  This is an economic lime calculator that will calculate corrected lime application rates based on lime RNV. Economic factors are also calculated to determine the actual value of the lime.

Econ LimeII  This is a more complex economic lime calculator that allows you to enter hauling, purchase and spreading cost of lime and you can compare up to three lime sources.

AGR1 Calc  The AGRI1 Calculator is based on University of Kentucky fertilizer and lime recommendations published in the UK AGRI1 publication entitled "2002-2003 Lime and Nutrient Recommendations". Laboratory data and crop information are entered and recommendations are calculated for the entered data.

Manure  This calculator is an EXCEL file that should be downloaded before operating. The calculator will determine manure application rates to meet nutrient demands of the crop.
# Data Input (One Fert)

<table>
<thead>
<tr>
<th>Recommendation Rate</th>
<th>N</th>
<th>P&lt;sub&gt;2&lt;/sub&gt;O&lt;sub&gt;5&lt;/sub&gt;</th>
<th>K&lt;sub&gt;2&lt;/sub&gt;O</th>
<th>Rec. Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fertilizer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade</td>
<td>34</td>
<td>0</td>
<td>0</td>
<td>lbs/acre</td>
</tr>
</tbody>
</table>

**Match:**
- ✓
- ○
- ○

**App. Unit:**

Click right mouse button in the output frame to print the results.

**Note:**
1. Grade can be modified for Manure or Other only.
2. Click right mouse button in the output frame to print the results.
# Data Input (Mult Fert)

<table>
<thead>
<tr>
<th>Recommendation Unit &amp; Rate</th>
<th>Rec. Unit</th>
<th>N</th>
<th>P&lt;sub&gt;2&lt;/sub&gt;O&lt;sub&gt;5&lt;/sub&gt;</th>
<th>K&lt;sub&gt;2&lt;/sub&gt;O</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fertilizer</td>
<td>lbs/acre</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**App. Unit**

<table>
<thead>
<tr>
<th>lbs/acre</th>
<th>0</th>
<th>0</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>lbs/acre</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>lbs/acre</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

**Note:**

1. Grade can be modified for Manure or Other only.
2. Click right mouse button in the output frame to print the results.
Economic Lime Calculator

INPUT >

Lime RNV: %
UK recommended rate: tons/acre
Cost: $/ton
Field size: acres

OUTPUT >

Adjusted rate: tons/acre
Cost of effective lime: $/ton of effective lime
Lime cost per acre: $/acre
Lime cost for whole field: $
Total lime for whole field: tons

Spring 2003 Table of Lime RNVs
Archived Tables of Lime RNVs
AGR-106: Determining the Quality of Aglime: Relative Neutralizing Value (RNV)
<table>
<thead>
<tr>
<th><strong>INPUT &gt;</strong></th>
<th><strong>SOURCE1</strong></th>
<th><strong>SOURCE2</strong></th>
<th><strong>SOURCE3</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Lime RNV:</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Lime Costs:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purchase:</td>
<td>$/ton</td>
<td>$/ton</td>
<td>$/ton</td>
</tr>
<tr>
<td>Hauling:</td>
<td>$/ton</td>
<td>$/ton</td>
<td>$/ton</td>
</tr>
<tr>
<td>Spreading:</td>
<td>$/ton</td>
<td>$/ton</td>
<td>$/ton</td>
</tr>
<tr>
<td>UK recommended rate:</td>
<td>tons/acre</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Field size:</td>
<td>acres</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>OUTPUT &gt;</strong></th>
<th><strong>Calc1</strong></th>
<th><strong>Calc2</strong></th>
<th><strong>Calc3</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjusted rate:</td>
<td>tons/acre</td>
<td>tons/acre</td>
<td>tons/acre</td>
</tr>
<tr>
<td>Cost of effective lime:</td>
<td>$/ton of effective lime</td>
<td>$/ton of effective lime</td>
<td>$/ton of effective lime</td>
</tr>
<tr>
<td>Lime cost per acre:</td>
<td>$/acre</td>
<td>$/acre</td>
<td>$/acre</td>
</tr>
<tr>
<td>Lime cost for whole field:</td>
<td>$</td>
<td>$</td>
<td>$</td>
</tr>
<tr>
<td>Total lime for whole field:</td>
<td>tons</td>
<td>tons</td>
<td>tons</td>
</tr>
</tbody>
</table>
AGR1 CALCULATOR

INPUT >

Soil pH: [ ]

SMP Buffer pH: [ ]

Primary crop: corn

Previous crop: Select One

Primary management: Select One

Primary use: Select One

Mehlich 3 P: [ ] lbs/acre

Mehlich 3 K: [ ] lbs/acre

Mehlich 3 Ca: [ ] lbs/acre

Mehlich 3 Mg: [ ] lbs/acre

Mehlich 3 Zn: [ ] lbs/acre

Solve

Report

Reset Labinfo

Reset All

Drainage: Select One

OUTPUT >

N rate: [ ] lbs/acre

K2O rate: [ ] lbs/acre

Mg rate: [ ] lbs/acre

P2O5 rate: [ ] lbs/acre

Lime rate: [ ] tons/acre

Zn rate: [ ] lbs/acre
## WORKSHEET FOR MANURE APPLICATION RATE 1/21/2004

### 1. Background Information
- **a. Field ID** Enter >
- **b. Field acres** Enter >
- **c. Crop to be grown** Enter >
- **d. Manure type (Table 1)** Enter >
- **e. ...management (Table 2)** Enter >
- **f. ...history (Table 3)** Enter >
- **g. ...units (Table 5)** Enter >
- **h. Basis for calculations** Enter >
- **i. Yield unit** Enter >
- **j. Estimated yield per acre** Enter >

### 2. Fertilizer Recom. or Crop Removal
- **a. Nitrogen** Enter > lbs/A
- **b. Phosphorus (P2O5)** Enter > lbs/A
- **c. Potassium (K2O)** Enter > lbs/A

### 3. Fertilizer Already Applied
- **a. N** Enter > lbs/A
- **b. P2O5** Enter > lbs/A
- **c. K2O** Enter > lbs/A

### 4. Residual N from Manure
- **a. Amount applied/acre last year** Enter >
- **b. lbs N/unit** Enter >
- **c. availability coefficient (Table 3)** Enter >
- **d. Available N(lbs/unit)** Enter > 0.0

### 5. Net Nutrient Needs
- **a. N (2a - 3a - 4d)** Enter > 0 lbs/A
- **b. P2O5 (2b - 3b)** Enter > 0 lbs/A
- **c. K2O (2c - 3c)** Enter > 0 lbs/A

### 6. Available Nutrients in Manure
- **a. N (lbs N/unit)** Enter >
- **availability coefficient (Table 2)** Enter >
- **Available N** Enter > 0.0
- **b. P2O5 (lbs P2O5/unit)** Enter >
- **Available P 2O5** Enter > 0.0
- **c. K2O (lbs K2O/unit)** Enter >
- **Available K 2O** Enter > 0.0

### 7. Application Rate to Supply Priority Nutrient
- **a. Priority Nutrient** Enter >
- **b. Priority Nutrient Needed** Enter > 0.0 lbs/A
- **c. Manure Application Rate** Enter > 0.0 lbs/A
- **d. Total Manure Applied (units)** Enter >

### 8. Nutrients Supplied by Manure
- **a. N (7c x 6a)** Enter > 0 lbs/A
- **b. P2O5 (7c x 6b)** Enter > 0 lbs/A
- **c. K2O (7c x 6c)** Enter > 0 lbs/A

### 9. Nutrient Balance
- (-) indicates need; (+) indicates excess
- **a. N (8a - 5a)** Enter > 0 lbs/A
- **b. P2O5 (8b - 5b)** Enter > 0 lbs/A
- **c. K2O (8c - 5c)** Enter > 0 lbs/A
99-01 Soil Test Summaries

Agriculture (A)
Home Lawn and Garden (H)
Commercial Horticulture (C)

96-98 Soil Test Summaries

Agriculture (A)

Contact Information: Frank Sikora (Soil Test Coordinator), phone: 859-257-2785, email: fsikora@uky.edu.
Author of javascript applications (fertilizer calculator, database applications): Zhiqiang Yu, zyu0@uky.edu.
### Soil test results (99-01) for Agricultural soil samples collected in Kenton Co(104,409 land acres).

<table>
<thead>
<tr>
<th></th>
<th>All</th>
<th>Sorted by Crop</th>
<th>Sorted by Soil Management</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Corn</td>
<td>Soybean</td>
<td>Forage</td>
</tr>
<tr>
<td>No. samples (99-01)</td>
<td>253</td>
<td>16</td>
<td>1</td>
</tr>
<tr>
<td>acres</td>
<td>11,625</td>
<td>600</td>
<td>0</td>
</tr>
<tr>
<td>Soil P * median</td>
<td>78</td>
<td>151</td>
<td>179</td>
</tr>
<tr>
<td>% v.low (&lt;10)</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>% low (10-30)</td>
<td>15</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>% med (30-60)</td>
<td>23</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>% high (60-80,&gt;60)</td>
<td>12</td>
<td>88</td>
<td>100</td>
</tr>
<tr>
<td>% v.high (&gt;80)</td>
<td>49</td>
<td>19</td>
<td>0</td>
</tr>
<tr>
<td>% &gt;200</td>
<td>9</td>
<td>19</td>
<td>0</td>
</tr>
<tr>
<td>Soil K* median</td>
<td>274</td>
<td>257</td>
<td>640</td>
</tr>
<tr>
<td>% v.low (&lt;100)</td>
<td>4</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>% low (100-200)</td>
<td>19</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>% med (200-300)</td>
<td>36</td>
<td>69</td>
<td>0</td>
</tr>
<tr>
<td>% high (300-450,&gt;450)</td>
<td>30</td>
<td>19</td>
<td>100</td>
</tr>
<tr>
<td>% v.high (&gt;450)</td>
<td>11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil pH median</td>
<td>6.3</td>
<td>6.9</td>
<td>6.2</td>
</tr>
<tr>
<td>% v.low (&lt;5.4)</td>
<td>15</td>
<td>19</td>
<td>0</td>
</tr>
<tr>
<td>% low (5.4-6.0)</td>
<td>24</td>
<td>13</td>
<td>6</td>
</tr>
<tr>
<td>% med (6.0-6.4)</td>
<td>18</td>
<td>6</td>
<td>100</td>
</tr>
<tr>
<td>% high (&gt;6.4)</td>
<td>43</td>
<td>63</td>
<td>0</td>
</tr>
</tbody>
</table>

* Units for Soil P and Soil K are lbs/acre P and lbs/acre K, respectively. For All and Tobacco, % high for Soil P and Soil K are 60-80 and 300-450, respectively. For all other categories, % high for Soil P and Soil K are >60 and >300, respectively.