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AGRONOMY NOTES

SOILS • CROPS

Prepared by Department of Agronomy, University of Kentucky Cooperative Extension Service
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APPLY NEEDED LIMESTONE THIS FALL

This fall is an ideal time to apply needed agricultural limestone.

Spreading equipment can get over the dry ground with less soil compaction, and limestone applied now can correct soil acidity during the winter months.

Before applying limestone, determine the need for it by soil test results of a representative sample. Make every effort to submit soil samples now to determine the need for limestone and apply it before bad weather this fall.

Soil test results on samples taken now can be used for fertilizer recommendations next spring. Research work has shown that variation in results between samples taken in the fall and again the following spring isn't enough to change the fertilizer recommendations.

Liming acid soils to reduce soil acidity is basic to a soil-building program. Applying limestone on acid soils:

1. Reduces soil acidity.
2. Reduces solubility of toxic substances such as manganese, iron and aluminum sufficiently to prevent crop injury.
3. Increases availability of some plant nutrients, particularly phosphorus.
4. Increases fixation of nitrogen by soil and legume nodule bacteria.
5. Speeds the decay of organic matter and release of plant nutrients through increased microbial activity.
6. Adds calcium and some magnesium.

These effects result in better soil structure, better vegetative cover, and higher crop yields.

Every effort should be made to encourage liming this fall. (See Univ. of Ky. Coop. Ext. Cir. 584, "Controlling Soil Acidity," for additional information)

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(To simplify information in this publication, trade names of some products are used. No endorsement is intended, nor is criticism implied of similar products not named.)

APPLICATION OF NITROGEN ON CONTINUOUS CORN LAND

Under Kentucky climatic conditions, applying nitrogen in the fall on land in continuous corn (where no cover crop is planted), is not recommended. In an experiment conducted by Professors John Ragland and A. L. Hatfield at the Campbellsville and Greenville soil experiment fields, nitrogen was applied on stalk land in October 1961 and at planting time in the spring of 1962. The spring applications produced higher yields than the fall applications. Apparently loss of nitrogen through leaching during the winter is greater than any advantage gained from increased rate of stalk decay.

Nitrogen was applied at rates of 30, 89, and 178 pounds per acre on different parts of the field. Plots with no nitrogen treatment were harvested along with each of the above replications.

The following table gives
Field results for 1962

| <u>Pounds Nitrogen per acre</u> | <u>Campbellsville Bushels Corn per Acre</u> | <u>Greenville Bushels Corn per Acre</u> |
|-------------------------------------|---|---|
| 0 | 97 | 47 |
| 30 - Fall | 106 | 55 |
| 30 - Spring | 104 | 72 |
| 0 | 99 | 23 |
| 89 - Fall | 117 | 48 |
| 89 - Spring | 130 | 65 |
| 0 | 102 | 28 |
| 178 - Fall | 130 | 67 |
| 178 - Spring | 145 | 74 |

Zinc deficiency reduced yields in the experiment on the Greenville field. These results represent only one year's data from replicated plots. The experiment was repeated this year, but yield data are not yet available.

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