

Benefits Of Soil Testing Shown In Intensive Study

By WALT JENDRZEJEWSKI

A report covering a recent intensive soil testing project by Marion County farmers in which 224 soil samples were taken shows some of the benefits of soil testing.

Forty-four of the samples were low in phosphate availability, 24 critically low. Ninety of the samples were low in potash availability. Fifteen samples were low in magnesium availability.

Of the 224 samples from the Stayton area 209 were low in boron and 158 of the samples were critically low.

Use of soil tests in Klamath County to date has not been intensive. Tests of samples scattered over the county, however, have uncovered some instances of low phosphate availability on mineral as well as muck soils.

Here, a low phosphate availability report for alfalfa, clover or pasture land is an indication to the farmer that superphosphate rather than sulfur should be applied.

Treble phosphate can be used instead of super phosphate if sulfur has been applied in the last year or two. Treble phosphate contains no sulfur.

Superphosphate is half gypsum and carries around 12 pounds of sulfate sulfur per 100 pounds. At 300 pound rates of application, single super provides about one year's sulfur requirement for legumes. Some trace elements occur in superphosphate made from western rock.

Phosphate availability is not likely to be low on lands rotated with potatoes where 400 to 500 pound rates of 16-20 fertilizer have been used. In these cases also sulfur residues are likely to be ample, particularly the first year or two of the alfalfa stand. Ammonium phosphate (16-20) carries about 15 pounds of sulfur per 100 pounds.

Here phosphate, sulfur and possibly boron are the plant nutrient elements most likely to be insufficiently available for maximum growth of legumes.

For grain and grass crops, commercial nitrogen fertilizers are quite profitable here. Heavy rates of nitrogen tend to raise protein percentage above the 12 per cent level and malt barley buyers object to this.

Where experience or soil tests indicate a need, phosphate is profitable also on grain crops.

Low potash or magnesium availability is rare on mineral soils in Klamath County. In some instances, moderate yield increases of potatoes have been obtained by including potash in potato fertilizer, but in most cases 16-20 sup-

plemented with additional N slowed down or injected has given very good results.

It is unlikely that the trace element molybdenum would give alfalfa hay increases here as it has in the Willamette Valley. With only one exception, analysis of a limited number of forage samples has shown high molybdenum content of Klamath forage.

Excessive molybdenum interferes with copper metabolism. In discriminate application of molybdenum to forage crops can result in molybdenum toxicity in animals using the forage.

Soil sample cartons and sampling instructions are available at the county agent's office for those who wish to use the services of the State Soil Testing Laboratory at Oregon State College.

A standard analysis at a \$2.50 fee covers pH, phosphate, potash, and a measure of the soil's base exchange capacity or a measure of sodium and total salts when these are problems.

The lab does not test for nitrogen or minor elements except boron. The boron test is available for a \$1 fee.

BEAT'S BIO

HOLLYWOOD (UPI) — The script for the screen biography of painter Paul Gauguin will be written by Lawrence Lipton, a beatnik novelist.

Nitrogen Fertilizer Use Increases Production

Use of nitrogen fertilizer adds about \$30,000,000 to Oregon farmers' pocketbooks each year, reports Dr. H. B. Cheney, head of the Oregon State College soils department.

Nitrogen fertilizer continues to be a "best buy" even though farmers practically never get 100 per cent recovery of added nitrogen in the crop to which it's applied, he notes. Research at OSC and in other states indicates that 70 per cent recovery of the nitrogen applied is real good.

What happens to the rest of the nitrogen? Dr. T. L. Jackson, OSC soils specialist, explained that some nitrogen may be lost by leaching; some may escape into the air under certain conditions; and some will be incorporated into soil organic matter.

OSC soil scientists have found little basis for claiming superiority of one kind of nitrogen fertilizer over another. In 65 field experiments in Oregon, no one nitrogen fertilizer was consistently better than another when the fertilizer was applied properly. Fertilizers compared include: ammonium nitrate, urea, ammonium sulfate, calcium nitrate, anhydrous ammonia, and aqua ammonia.

Regardless of the type of nitrogen fertilizer used, Oregon farmers can expect less than 5 per cent loss of nitrogen to the air when the fertilizer is applied prop-

erly to the soil, Jackson said. He listed three situations when farmers should expect loss to the air:

When nitrate nitrogen is applied to soils wet enough to have a poor supply of oxygen; when ammonium forms of nitrogen and urea are left on the surface of soils with a pH above 7.0; and when high rates of urea are left on the surface of acid, sandy-textured, moist soils at high temperatures (vegetative cover will reduce this urea loss).

Losses from urea should not be expected when irrigation or rain immediately follow application.

Cheney suggests farmers consult their county extension agent for detailed information about these factors affecting loss.

Researchers found some experiments where one source of nitrogen gave better results than other sources. But in every case there were other experiments where this source of nitrogen wasn't superior, Cheney pointed



out.

On the basis of the study, OSC researchers came to this conclusion—the nitrogen fertilizer that costs the least for each pound of actual nitrogen applied to the soil is usually the best. Costs of transportation, handling, and application should be included in figuring costs.

Of course, there are items other than cost to keep in mind. The value of other plant nutrients—such as sulfur—in some nitrogen fertilizers should be recognized, but only if that plant nutrient is needed in the soil on which the fertilizer is to be applied.

IVORY PRICES UP

NEW YORK (UPI) — Inflation has hit elephant tusks from Africa. Ivory buyers in London have been paying as much as \$420 a hundred pounds, 40 per cent more than a year ago. Dealers say fear of shortages has touched off a run on ivory by manufacturers of piano keys and art objects.

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