SOIL TESTING

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There are many factors that contribute to normal plant growth and higher yields for a greater net return per acre. One of these factors is soil fertility. Other factors which may contribute to low yields are disease, insects, unfavorable weather, poor drainage, inadequate moisture, unfavorable physical condition of the soil or weed spray residues.

Soil testing is a tool you can use to determine the level of phosphate or potash in the soil. Both of these elements are necessary for the production of high quality potatoes. It is cheap insurance to know prior to planting a high cost crop, if you have sufficient quantities of phosphate and potash to carry your crop to maturity.

Recommendations for the use of phosphate and potash fertilizer are based on the assumption that samples have been taken and prepared according to sampling instructions provided by the Washington State University Soil Testing Laboratory. The instructions are printed on the reverse side of W.S.U. Soil Testing information sheet. The soil sample should represent a composite of several soil samples taken from a field of not more than 15 acres at a depth of 6 to 8 inches. Where you have soil variances as indicated by the growth of the previous crop, a soil sample should be taken of this area alone to provide a clear picture whether or not phosphate or potash are lacking.

With the help of a soil test, the right kind and amount of fertilizer can be recommended to bring the fertility level of a soil up to a highly productive soil.

The W.S.U. Soil Testing Laboratory have instigated a new procedure to speed up the soil analysis returns to the farmer. These are now sent direct to the farmer with Fertilizer Recommendation Sheets for each crop to be grown unless a special test is made for salt and alkalinity, boron or arsenic. In this case the soil analysis report is sent to the County Extension Office for recommendations based on the soil test. The amount of nitrogen to apply per acre is indicated on the Fertilizer Recommendation Sheets. There is no soil test for zinc, however for crops requiring zinc such as potatoes, beans, corn and onions the amount to apply is indicated in the F. R.'s.

Perhaps we should explain briefly how you can interpret your soil analysis report through the two charts. First, we will look at the soil test analysis report:

W.S.U. Soil Test Analysis

Sample No.	Crop	P_2O_5 Level	K_2O Level
1	Potatoes	20.5 H	400 H
2	Potatoes	15.5 H	180 L
3	Potatoes	10.2 L	350 H
4	Potatoes	3.2 V.L.	275 M

Sample No. 1 indicates that the available nutrient level of phosphate and potash are high enough for potatoes. In sample No. 2 the soil test would indicate a medium phosphate level requiring 40 - 60 pounds of available phosphate and a low level of potash requiring 60 - 120 pounds of available potash per acre. Sample No. 3 with low phosphate and high potash level would need 60 - 120 lbs. phosphate and no potash. Sample No. 4 with a very low phosphate reading would require 120 - 200 pounds of available phosphate plus 60 pounds of available potash per acre.

The table on phosphate and potash recommendations for the various plant nutrient levels are taken from the Fertilizer Recommendation Sheet for Potatoes.

Soil Test Rating	P_2O_5 Recommendations lbs. P_2O_5 per acre	K_2O Recommendations lbs. K_2O per acre
Extremely low	200 - 300	- - -
Very low	120 - 200	120 - 180
Low	60 - 120	60 - 120
Medium	40 - 60	0 - 60
High	None	None

When you mail your samples to the W.S.U. Soil Testing Laboratory, be sure to place the soil in a plastic bag prior to placing it in the soil carton. Then wrap the soil samples securely in another cardboard box to avoid damage enroute to Pullman. The U.S. Postal Service will not accept soil samples unless they are packaged in a plastic bag. Broken soil cartons with loose soil will damage other mail, especially radio tapes being returned to W.S.U.

The information sheet designating crop to be grown and past history should be mailed along with your soil samples.

Again, I wish to emphasize that soil testing is a tool to determine the nutrient level of your soil. The soil test recommendations are based on research work conducted on soil fertility in correlation with yield response. A soil test can diagnose fertility problems and problems of salinity and alkali correctly up to 85% of the time. It requires 10 to 14 days for your soil test analysis report to be returned to you, so allow sufficient time to permit you to plan your fertilizer needs for your crops prior to planting.