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. . . and why

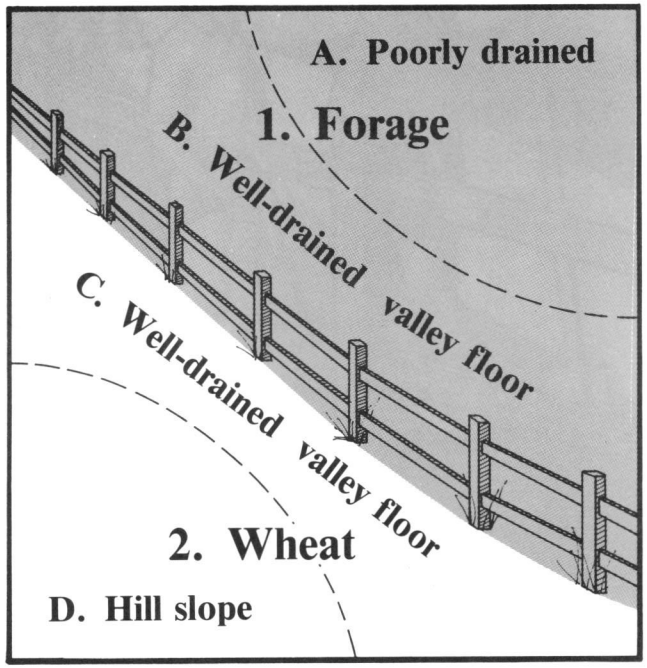
OREGON STATE UNIVERSITY
EXTENSION SERVICE

How to take a soil sample... and why

In Oregon, soil tests such as those conducted in the OSU soil testing laboratory will help you to develop and maintain a more productive soil and to increase net returns per acre by providing information on the available nutrient content and fertility status of the soil. This helps you to select the correct kind and amount of fertilizer and liming material.

A soil sample weighing approximately ½ pound is used to represent from 2 to 40 million pounds of soil in the field. Thus, care in soil sampling is essential.

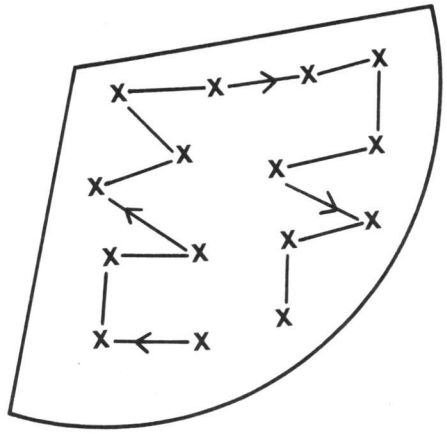
Each soil sample should represent only one soil type or soil condition



Sample different soil types separately. Thus A, B, and D (above) should be sampled separately. Areas such as 1 and 2, with different management histories, should be sampled separately. In this example, a separate soil sample should be taken from each of the four following sampling areas: 1A—Forage on poorly drained soil. 1B—Forage on well-drained valley floor soil. 2C—Wheat on well-drained valley floor soil. 2D—Wheat on hill slope soil.

A good soil sample should represent the area

- Each sample should consist of subsamples (X) taken from 15 to 20 locations within the sampling area.



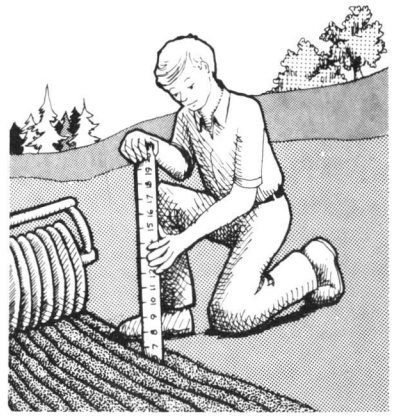
- Where fertilizer has previously been banded, as for vegetable crops, take at least 30 to 40 subsamples. Don't take subsamples from fertilizer bands where you can identify these.

Avoid small, unusual areas

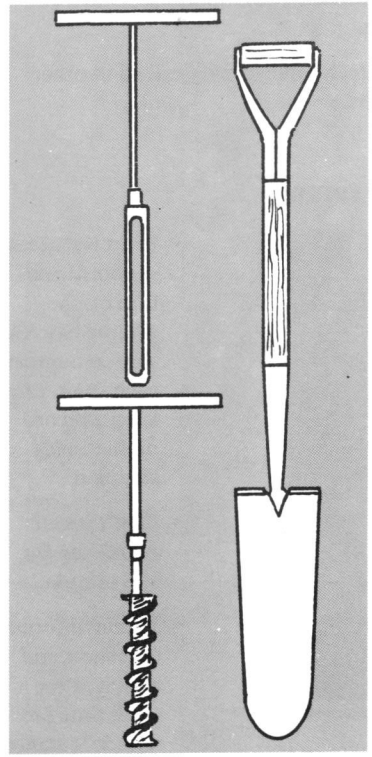
- Take separate soil samples from unusual areas that are large enough to fertilize separately.

Take soil sample to the correct depth

- Unless otherwise specified, soil samples are taken to plow depth—usually, from the surface down to about 6 to 9 inches.
- When deeper soil samples are required, remove them from the bottom of the holes from which you took the surface sample.



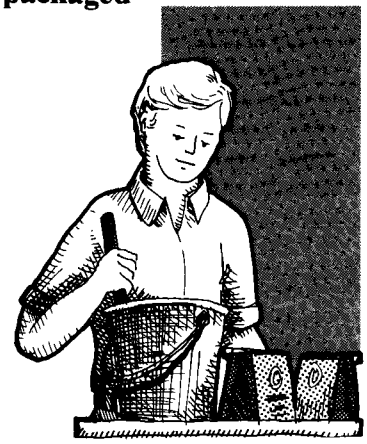
Avoid contaminating the sample



- Use clean sampling tools.
- Avoid contaminating the sample during mixing or packaging.
- A small amount of fertilizer residue on tools or hands, for instance, can cause serious contamination of the soil sample.
- Galvanized, brass, or bronze sampling tools should not be used for soil samples where a soil test for micronutrients such as zinc is to be run.

The soil sample should be carefully mixed and packaged

- Place soil subsamples in a clean container and mix thoroughly.
- Fill the soil sample bag with the soil mixture.

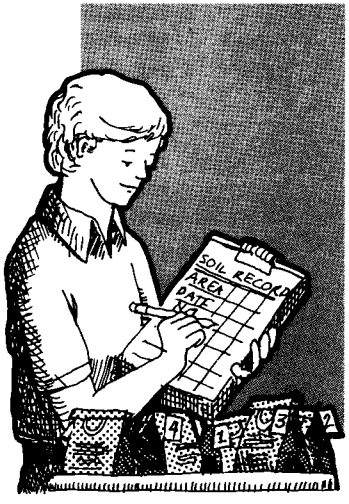


Special soil-sampling techniques are sometimes required for

- Some crops such as established orchards.
- Some nutrients such as nitrate nitrogen. Nitrate nitrogen soil tests are recommended only for a limited number of crops in eastern Oregon.

(Special soil sampling techniques are described in other publications or instructions.)

Forwarding the soil sample



- Print the necessary information on the sample bag. Be sure to number each sample and keep a record on the fields sampled.
- Don't use a paper bag for soil sample.
- Fill out information sheet and mail it at the same time the sample is mailed.
- Your county Extension agent has a list of laboratories that perform soil tests.
- Include a check to cover the cost of the soil test.
- Recommendations are based on the results of fertilizer experiments, soil surveys, and results obtained by farmers.

How often should soils be tested?

- For perennial crops such as alfalfa, grass seed, and permanent pasture, soils should be tested prior to seeding and subsequently at least every 3 years. The initial soil test, prior to seeding, is particularly important.
- For annual crops, the soil should be tested annually before planting.
- Soil testing well in advance of planting is important, particularly in the case of acid soils where liming is likely to be needed. Lime should be applied and mixed with the soil several months prior to seeding, since lime reacts slowly with the soil.

This publication, originally prepared at Oregon State University by E. Hugh Gardner, former Extension soil science specialist, was slightly revised by John Hart, Extension soil science specialist.

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