Soil Sampling

An accurate soil analysis is vital to understanding your soil. We use high quality laboratory analyses that work specifically for our system. Before sending soil samples to us please check out Taking a Good Soil Sample.

From the basis of a detailed soil analysis and - importantly - the additional information that you provide by completing the free soil test worksheet, we build a specific fertilizer recommendation for each soil sample, tailoring the recommendations to your particular operation and goals.

The recommendations will utilize the proven principles of the Kinsey/ Albrecht system of soil fertility management. The aim is to correct and raise the overall soil fertility to improve and maintain yields and/or crop quality. If we have previously made recommendations for the same soil location, and it has been properly identified as such, then these previous analyses and recommendations are taken into account also.

Fertilizer Recommendations

Our recommendation report for each sample has two parts: the soil analysis and recommendations for achieving the proper fertility level. The basic soil analysis will normally include:

- Total Exchange Capacity (T.E.C.)
- Organic Matter(Humus) as percent
- Nitrogen (N released from colloidal humus)
- Sulfate (Expressed as elemental sulfur) in ppm
- Phosphates (as P2O5)
- Olsen Value (Included at no charge if pH is above 7.5)
- Percent Base Saturation of:
    - Calcium
    - Magnesium
    - Potassium
    - Sodium
    - Other Bases
    - Exchangeable Hydrogen
- Calcium, Magnesium, Potassium, and Sodium levels-in kg/ha*

- Trace Elements:
    - Boron in ppm
    - Iron in ppm
    - Manganese in ppm
    - Copper in ppm
    - Zinc in ppm

Additional Tests (all optional and available at an additional charge per sample. Cobalt in ppm (We encourage this test for each sample that you send to us for the first time for any area that will provide feed for livestock or significant amounts of food for people.)

- Molybdenum in ppm
- Chlorides in ppm, Salt Concentration in d/Sm
- Aluminium
- Limestone Analysis

Our recommendations for a specific plan of fertilizer amendments are tailored to your expressed short or long term goals, and take into account the previous history of crops and fertilizers at the location, farming conditions in the area, your type of operation (for instance organic or conventional), fertilizer preferences, and other factors, as supplied by the grower, in addition to the condition of the soil. Where appropriate the recommendations will include additional notes on materials to be used, application method and timing. Please feel free to discuss your requirements beforehand. Our aim is to provide a service that will achieve excellent results for you.

Taking a Good Soil Sample

The way the soil samples are taken is extremely important, as the recommendations you receive from soil tests will only be as good as the samples you send for analysis. Following the instructions below will assure that the samples you send are taken in the way we need them for a proper analysis.

When to take a soil sample. Soil samples may be collected at any time of the year, provided that the area is not suffering from prolonged drought, that no nitrogen has been applied in the last 30 days and no sulphur has been used in the last six months.

Late spring and early summer sampling avoids the rush, shows the soil's fertility at its best and gives time to plan a soil fertility program which can begin directly following harvest if necessary. However, if no samples have been taken within the last two years, the best time to sample is as soon as circumstances permit.

Generally, sampling should be done every year if fertility is high and / or trace elements are being used to achieve top yields. CAUTION: without special arrangements we recommend that if possible, no soil samples ever be sent for analysis when a soil is so extremely dry that plants will not grow there.

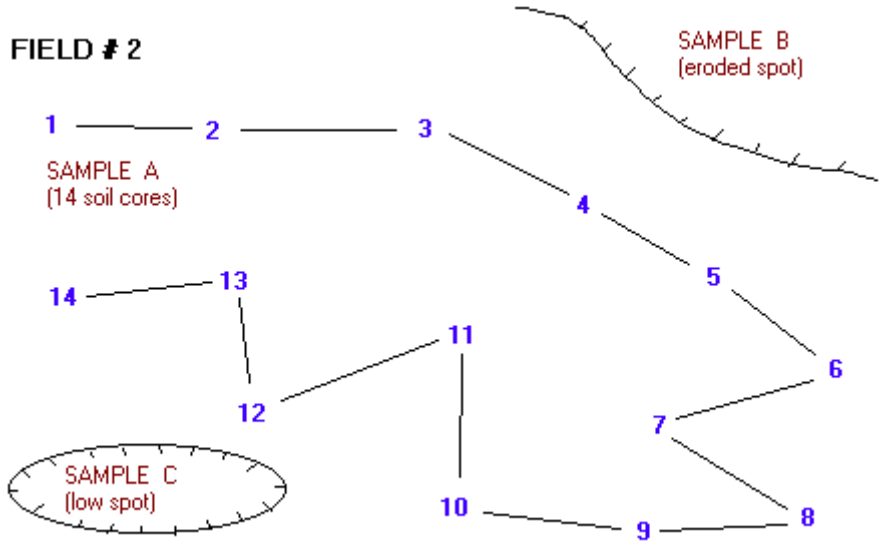
Prepare a map of the areas being tested. A good map makes your sampling repeatable from year to year and is useful at the time of fertilization. Designate a number, or some other

identification, even a name - up to 8 characters - for each field. Use permanent lines such as roads, ditches and fences for boundary lines.

Divide the field map into areas that have the same soil colour, slope, texture, drainage and past history of erosion. Each area should have the same cropping history, fertilizer and manure treatments and the same intended crop for all the ground within that area. Assign each of the areas sampled a specific number or letter (or a combination of both) so you can correctly identify it.

For example, Field #2 could have three areas: A - the high ground, B - the sloping ground, and C - the low, level ground. The numbers written on the sample bag could be 2A, 2B, and 2C.

Sample Map:



It is recommended that sampled areas represent no more than 20 acres (8-9 hectares) the first year our testing program is used, even if soils are uniform in texture and relief. Areas with taller or shorter plants, different weed or grass patterns, higher or lower yields, etc., should be avoided, or sampled separately if large enough to fertilize properly. The next time samples are taken, combine those areas that by analysis have been shown to be alike. You may wish to combine very small areas that have all the same characteristics, into one composite sample.

Sample at least 100 m away from gravel or crushed limestone roads and stay at least 6 m away from fence rows or the edge of a field.

Avoid, or sample separately, the following:

- Eroded hillsides or low spots
- Terraces, ditch banks, lid roadbeds or fence rows
- Animal droppings, urine spots, burn piles, lid manure, straw or hay stacks
- Areas around sheds, barns and / or where buildings have formerly stood
- Lime, fertilizer, chemical spill areas and fertilizer bands
- Dead and back furrows

- Drought-stressed areas
- Areas where large amounts of sulphur have been applied in the last two to six months, or where nitrogen has been knifed in or recently broadcast in large amounts.

Collecting the Samples

The sample bag: Use a new soil-sample container, plastic bag or plastic container. Soil-sample bags are available from **Afri-Agri**. Zip-loc bags are fine - as long as they have never been used - but put Scotch tape over the writing or attach masking tape to write on because all types of marking ink can rub off the bag during shipment. Do not use paper sacks from the grocery store, bread wrappers, or such items, due to possible contamination. Avoid using a plastic bucket that has been used for other purposes. Even repeated washings of a bucket used to mix salt and minerals for feed can still result in contamination of the sample.

Label the sample bags with your name, the farm name if any, field number and sample area. Prepare a map or sketch of the area for your own records. Make sure the labeling on the bag matches the number of the field and area on your map. Labeling the bags to match the areas before taking the sample helps.

A SOIL PROBE is recommended for easiest and best sampling results. Using a soil probe or shovel, sample down to a depth of 17cm, or to the depth the soil will be thoroughly mixed when worked if that will be deeper 17 cm. For no-till crops, orchards, vineyards, pastures, hay meadows, lawns, etc., where soils will not be worked, the depth should be 10cm. Sampling to the proper depth is extremely important if we are to provide each grower with the correct recommendations.

Put the soil, using several probes from like areas to make up the sample, into the sample bag. Removal of obvious debris (roots, leaves, etc.) is fine but unnecessary as it will not adversely affect the sample. If you do remove debris from the sample, be careful that none of the actual soil is removed with it.

Probe the soil every 50 to 100 paces, always taking a minimum of 20 probes per composite sample for smaller areas, and maximum 30-40 from larger areas. Please remember : this will be a very detailed analysis, which will only be as accurate as the sample you send.

Sending Soil Samples to N-xt Soil Services

Soils may be sent wet or dry (use a Zip-loc or plastic lined bag for wet samples). Samples can be dried at home by spreading them on waxed paper and air-drying. DO NOT DRY THE SAMPLES IN AN OVEN. It is okay to leave samples to dry in the sun.

Please enclose a Soils Worksheet with your samples.