

# KINSEY AGRICULTURAL SERVICES, INC

## Taking Soil Samples For Analysis And Recommendations

### **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* and *Sending Soil Samples to K.A.S.* on our website.

From the basis of a detailed soil analysis, and plant tissue analysis when necessary, and - importantly - the additional information that you provide by completing the free soil test work-sheet, 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.

Samples originating outside of the U.S. and Canada require specific USDA clearance and may have to be priced differently according to the service you require - please contact us for the proper information concerning cost of analysis and turn-around time before sending any soil or plant samples from outside the U.S.A.

### **Fertilizer Recommendations**

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

- Total Exchange Capacity (T.E.C.)
- Soil pH
- Organic Matter (Humus) as percent
- Nitrogen (N released from colloidal humus)
- Sulfate (Expressed as elemental sulfur) in ppm
- Phosphates (as P205)
- 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 lbs/acre\*
- 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 – please contact us for current prices)*

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

Aluminum

Limestone Analysis

Manure Analysis (includes S, Ca and Mg, plus B, Fe, Mn, Cu, & Zn)

Manure Analysis (N-P-K only)

Compost Analysis

\* or, if you prefer, in kg/ha; lbs/1000sq.ft.; lbs/cu.yd

**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 with our staff. Our aim is to provide a service that will achieve excellent results for you.

We do not sell fertilizers or soil amendments. It is suggested that to the extent possible you work locally to obtain materials from your preferred fertilizer dealership. Since each soil is tested in more detail than is customarily done in various areas, and provided as well with its own specific set of recommendations, some needed materials may not always be stocked by local dealers. This tends to be especially true for those striving to be certified organic growers. In such cases, where the volume will be that of a semi-load or more of materials, you or your dealer may wish to contact North Pacific Trading in Portland, Oregon as a source of fertilizer and/or soil amendments. (We have no financial ties to North Pacific Trading but a number of our clients have used them to obtain gypsum, rock phosphate, lime and high-quality micro-nutrient fertilizers.)

## 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 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 sulfur 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 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.**

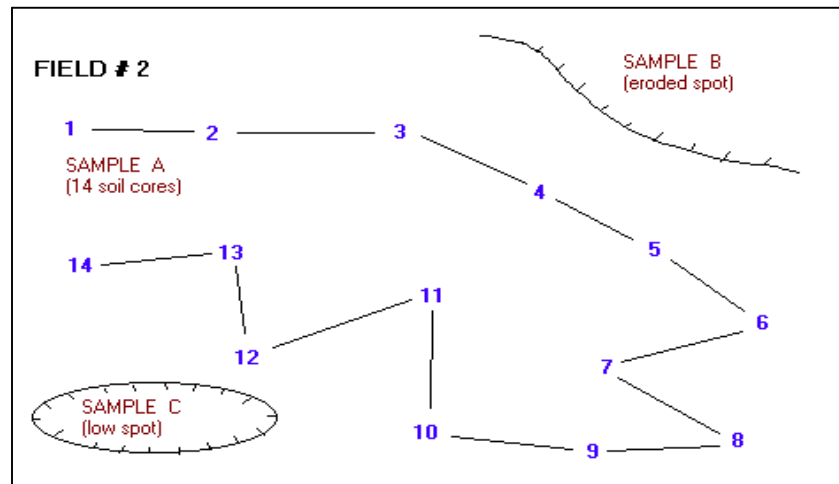
Generally, sampling should be done every year if fertility is high and / or trace elements are being used to achieve top yields. CAUTION: without special arrangements we recommend that if possible, no soil samples ever be sent for analysis when a soil is so extremely dry that plants will not grow there.

**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 color, 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 would 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 300 feet (92m) away from gravel or crushed limestone roads and stay at least 20 feet (6m) away from fence rows or the edge of a field.

***Avoid, or sample separately:***

- Eroded hillsides or low spots
- Terraces, ditch banks, old roadbeds or fence rows
- Animal droppings, urine spots, burn piles, old 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 sulfur 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 Sample(s)**

***The sample bag:*** Use a new soil-sample container, plastic bag or plastic container. Soil-sample bags are available free from Kinsey Agricultural Services. 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 our 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 6½ -7 inches (17cm), or to the depth the soil will be thoroughly mixed when worked if that will be deeper than 6½ -7 inches. *For no-till crops, orchards, vineyards, pastures, hay meadows, lawns, etc., where soils will not be worked, the depth should be 4 inches (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 5 probes per composite sample for smaller areas, and one probe for every 1 (one) to 2 (two) acres from larger areas. Only a small amount of soil is necessary for analysis. A cupful of soil is more than enough. Just be sure your sample represents the entire soil profile, if mixed, in order to send only a small portion.

*Please remember : this will be a very detailed analysis, which will only be as accurate as the sample you send.*

Our "Hands-On Agronomy" DVD or Video Workshop has a section on taking soil samples properly, and provides a visual look at how to sample. Should you be interested please see our 'Publications' page on [www.kinseyag.com](http://www.kinseyag.com) for ordering information.

## **Sending Soil Samples to Kinsey Agricultural Services**

***Pack the samples tightly.*** For larger packages (more than 2 or 3 samples), we recommend UPS (United Parcel Service), Federal Express or a reputable shipper of that type.

Presently, within the United States, the US Postal Service has a small pre-paid box which can be ordered from USPS.com, or the local Post Office, packed full and sent for a set flat-rate charge. Just be sure to pack the samples tightly to avoid spillage or breaking open inside the box.

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.*** Soils worksheets can be downloaded (pdf 31KB) from the 'Soil Analysis' or 'Contact Us' page on [www.kinseyag.com](http://www.kinseyag.com). Alternatively you can call us at (573) 683 3880. Be sure to complete the worksheet as fully as possible; the information requested on the worksheet is important.

***If your soil samples originate in the U.S.A. or Canada,*** please send the soils worksheet along with the samples and payment to us at our Missouri address. For soils shipped **from other countries** you will need to make special arrangements with us for exemption stickers and address labels, to conform to USDA regulations. Please contact us before sending samples for analysis to check that we can meet your deadline .

*Please note: No 'rush' samples can be accepted without prior approval from our office.*