

## Taking a Soil Sample Made Simple

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It is advisable to test the soil in the vegetable garden, lawn or flower beds every two or three years. If you do an outstanding job of keeping records on what fertilizer has been used, estimate how much fertilizer crops, turf or plants have used each year and what the original level of nutrients was, you could probably go five years or so between tests. That's not the norm for most people, so you should probably test more often.

This is becoming more important from the aspect of environmental concerns. If we add too much fertilizer, we're risking high rates of nutrient transport from our property to streams and ground water via storm water runoff and through leaching. This year we've had more water transport than normal. Our normal rainfall is 40" to 42". I've measured 54.69" of rain and water equivalent snow at my house in a pretty accurate gauge since January 1, 2008. The University of Missouri Commercial Ag weather station at Lamar has recorded 53.74" in the same time period. You should know by your own experience this year that we've had above average rainfall.

One of the most frequent questions we get in the Jasper County University of Missouri Extension Center is regarding how to take a soil test. Some of the tools used to collect a sample can be seen in photo 1.



- 1. Carpenter's wood bit & cordless drill, soil probe, auger, garden trowel, small plastic tub with 1" hole & plastic bucket, plastic bag or clean can**

The carpenter's wood bit mounted in a cordless drill is really easy to use. Place it through a 1" hole in the bottom of the small plastic tub (such as a whipped topping, margarine or butter tub) and drill a hole in the soil about 6" deep. See photo 2. As you extract the sample, soil falls into the tub as in photo 3. The auger works similarly to the wood bit shown in photo 4. We have soil probes available for loan to collect a soil sample. With the probe you simply push it in the ground and hope you don't hit a rock. Refer to photos 5 and 6 for a view of the probe. Lacking any of these tools, a garden trowel can be used as in photos 7, 8 and 9. Dig a 4" to 6" diameter hole about 4" to 6" deep. Then take a slice from the side of the hole about 1" thick. Discard all of this slice except the middle 1" and place in the bucket. Regardless of which tool you use, put the sample plug or core in the bucket each time.



**2. Carpenter's wood bit & cordless drill**



**3. The plastic tub catches the soil as the bit is extracted from the hole**



**4. Using an auger**



**5. Sampling with a soil probe**



**6. One small core of soil**



**7. Using a garden trowel to get a sample of soil**



**8. A slice of soil about 1" thick from the side of the hole**



**9. Use only the center of the slice about 1" wide**

How many plugs or core samples do you need? It takes a pint of soil to run the analysis. This will probably take six or seven plugs, but remember you want a good representative sample, so if it's a large area take more plugs. Mix all these together, crumbling any large clods, extracting any gravel and excess plant material as in photos 10 and 11 below.



**10. Break up any clods such as these**



**11. Once clods are broken up, mix with rest of soil in the bucket**

How many samples should you take? If there are problem areas in the lawn, for example, should you take a sample just in that area and a sample from the rest of the lawn? Samples analyzed through our lab cost \$15. Remember it takes a pint of soil for each area. If you're comfortable spending the money, analyze areas separately. On the other hand, if you're going to end up treating all areas the same, such as applying fertilizer at the same rate over the entire area, then it's pointless to analyze areas separately.

When you deliver the sample to our office for analysis, we'll box it up and mail it to our lab at MU.



12. Boxing up the sample



13. Anything over a pint is discarded

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