

# Estimate soil texture-by-feel

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The ability to estimate soil texture-by-feel is an important skill that students and registered soil scientists should learn.

Many soil properties depend largely on soil texture, and texture impacts most land-use decisions. Soil texture strongly influences the nutrient holding ability of a soil, the amount of water the soil can store, the amount of this water that is available to plants, how fast water moves through the soil, the effectiveness of soil in cleaning up waste water, the shrink-swell nature of soil, and many other properties.

D.P. Franzmeier and P.R. Owens, Purdue University, write about how soil texture can be determined by using the texture-by-feel method in an article published in the 2008 *Journal of Natural Resources and Life Sciences Education*.

"Soil texture can be determined in the field using the texture-by-feel method or the samples may be sent to a laboratory for particle-size analysis. The laboratory option is more accurate, but it is more expensive and slower because it can take weeks or months to get the results," explains Owens.

The field method is less accurate but much faster. Soil scientists use texture-by-feel to provide quick reliable estimates of soil texture in the field. This method is used by researchers where numerous samples are required to capture variability, developing soil surveys, and consultants for sizing on-site wastewater disposal systems.

When the texture-by-feel method is used, the estimator takes a soil sample about the size of a marble up to the size of a golf ball. The person estimates the texture by rolling, squeezing, flattening, and pressing the soil between his fingers. Each person develops his own technique for estimating texture. The important point is that while learning the technique, he must always compare his results with laboratory data.

A computer program assesses student performance for estimating particle-size distribution and soil texture. If the estimate coincides exactly with laboratory results, the score is 100%. If the estimate and laboratory results are as far apart as possible, at opposite corners of the texture triangle, the score is zero.

"Students appreciate the fairness of grading. Also, we can use the method to let a student or professional know if their estimates are consistently above or below the laboratory values, which helps them calibrate their fingers," says Owens.

"We have used this tool to help registered soil scientists improve their field skills and they seem to enjoy the challenge," says Franzmeier.

Source: Soil Science Society of America

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