

USDA Soil Texture Calculator

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Thank you for using the United States Department of Agriculture (USDA) Soil Texture Calculator application. This application is designed to automatically calculate USDA soil texture classifications based on percent sand, silt, and clay soil components.

Using the application

The application can calculate soil texture classifications from soil component fields specified in a text file (.txt extension) or csv file (.csv extension). Along with soil component fields, several parameters must be specified to run the application. The following sections outline the parameters that must be specified to run the application.

Select File

File (.csv or .txt): The first parameter is the file that contains the soil component fields. This can be either a text file (.txt extension) or csv file (.csv extension).

Input Delimiter: Since text and csv file types are delimited, users will also need to specify the input file's delimiter to correctly parse the input file. The default delimiter is a comma “,” but other delimiters are possible, including tabs, spaces, etc. When specifying a delimiter, the delimiter must be enclosed by double quotations.

Sand Field: Once a file is selected, the Sand Field parameter will automatically be populated by the column headers of the file. Users must then choose which column contains percent sand.

Silt Field: Once a file is selected, the Silt Field parameter will automatically be populated by the column headers of the file. Users must then choose which column contains percent silt.

Clay Field: Once a file is selected, the Clay Field parameter will automatically be populated by the column headers of the file. Users must then choose which column contains percent clay.

Settings

Output Column Name: A USDA soil texture class will be calculated for each record in the input file, if possible, and appended to the end of the input data. Users must specify a column header for this output column.

Output Format: An output file can be written in either a delimited text format (.txt extension) or a csv format (.csv extension). If the output file format matches the input format, the original file will be overwritten i.e., the output column of soil textures will be appended the end of the original file data. Otherwise, a new file will be written.

Output Delimiter: Users may specify the delimiting character of the output files. The default delimiter is a comma “,” but other delimiters are possible, including tabs, spaces, etc. The output delimiter must be enclosed by double quotations.

Commands

Help: This command will open the USDA Soil Texture Calculator Manual (this file) so that users may review the help documentation. The application will search in the directory where the application is stored for a file called *USDAsoilTextureCalculatorManual.pdf*. If this file has been deleted or moved to a different directory, the application won't be able to open the help documentation.

Open File: Once the application has finished calculating soil textures and writing the data, users may open the output file to review the data. This command opens the output file.

Run: This command will run the application. The application will first attempt to check the input parameters to ensure that they are correct. If they are not correct, users will receive a warning to correct the parameters before attempting to run the application again. If the parameters are correct, the application will begin calculating soil texture classifications from the input fields specified. A USDA soil texture class will be calculated for each record in the input file, if possible. If the sand, silt, and clay percentages do not correspond to any soil class (for example, if all components are zero percent), a texture of “Not Available” will be substituted in the output column. Furthermore, if an error occurs (such as a missing value), the output texture will be left blank, and users will receive a notification when the application completes detailing the number of errors that occurred. On occasion the user interface will appear to be unresponsive as it runs (“Not Responding” may appear at the top of the application window), but this is no cause for concern; the application is still running in the background and will complete eventually.