**Determining Makeup of Soil**

The physical properties of soil are characteristics that a producer can see or feel. These properties include texture, structure, consistence and tilth. The physical properties can influence the supply of air and water in the soil. In addition nutrients that are available in the soil differ between soil types. Knowing the physical properties of the soil is very important in production agriculture.

In most cases it is impractical to change the physical properties of the soil. Instead, producers must either select crops that are suitable for there soil type, or by land that contains the soil types that they need for a particular crop. Coarse sandy soils dry out faster they fine clay soils. If you are trying to grow a crop that has high moisture needs on sand then you may need to irrigate the crop. On the other hand if you are trying to crop a crop that have very little water needs on clay then you may need to tile the field so that the water will drain off.

**Materials:**

* soil sample
* Large test tube or quart jars with lids
* Metric ruler
* Tablespoon

**Procedures:**

1. Label your jar.
2. Fill jar of test tube about 1/3 full of soil.
3. Add distilled water to about the 2/ 3 full level
4. Place the cap on the jar and shake for 5 minutes
5. Place the jar where it will not be disturbed and let it stand for 24 hours.
6. After 24 hours measure the depth of settled soil. All of the soil particles have settle so this is the TOTAL DEPTH of the soil. (Record this depth on you chart)
7. Measure the amount of sand at the bottom of the test tube and record.
8. Measure the amount of silt in the middle of the test tube and record.
9. Measure the amount of clay at the top of the test tube and record.

Table

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| --- | --- | --- |
| **Measure of Sediment** | **Sample** | **% of Sample** |
| A. Total Depth |  |  |
| B. Sand Depth |  |  |
| C. Silt Depth |  |  |
| D . Clay Depth |  |  |

1. Calculate the percentage of each soil particle using the following formulas:

% sand = sand depth / total depth x 100

% silt = silt depth / total depth x 100

% clay = clay depth / total depth x 100

1. Classify the soil samples using the percentages calculated and the soil texture triangle.

