



## Georgia Clay or Ultisol

**Georgia Red Clay** is the common name for a soil found in Georgia that is red in color. It is prevalent in other locations as well. It is called clay but it is actually classified as **Ultisol**. The red clay gets its color from iron oxide. Clay soil, called ultisol by soil scientists, has an average of **16% air space, 2% organic matter, and 82% minerals**. What gardeners typically strive for is 50% air space, 5% organic material, and 45% mineral content. Big difference, right?

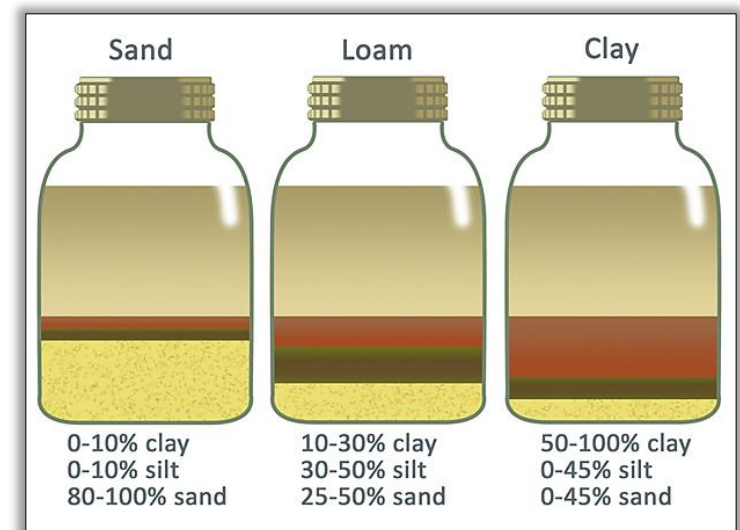
Clay soil can be frustrating. It doesn't drain in the spring and cracks like the Grand Canyon in the summer. Red clay soil makes it difficult for many southern and northwest coast farmers to produce a good crop. If you have it, you're probably wondering how to improve clay soil.

**First things first:** you need to be sure you have it before you start learning how to fix clay soil. If you aren't sure, you can find out if you have clay soil by doing a texture ribbon test or a jar test.

### The Jar Test

***For the jar test, you will need a glass jar. A pint-sized Mason jar or an old spaghetti sauce jar works well.***

Collect about one cup of soil from about three inches deep. Remove any pebbles or rocks from the sample. Add the soil to the jar. Next, fill the jar with water about one inch from the top. You can add a teaspoon of borax to help settle the particulates. If you don't have borax, use dishwashing detergent or leave this step out. Place the lid on the jar. Shake it vigorously for several minutes. You want it to mix well. Set the container on a level surface and leave it alone for 24 hours. After that time, the soil will separate into layers. Sand is heaviest and sinks to the bottom. The middle layer is loam, and the clay is at the top. You should end up with clear water at the top.



**Which layer is the thickest in your jar? If it's the clay layer – you guessed – you have clay soil.**

A "normal" pH is dependent on several factors but what is most important is what you are trying to grow in the soil. Different plants have different pH ranges for optimal growth. Most turfgrass species do best at a soil pH between 5.5 and 6.5. When you submit your soil sample, you will need to let the extension agent know what you are looking to grow (e.g. bermudagrass, zoysiagrass, vegetables, etc.) so they can code the sample correctly. With a correct code your soil analysis results will have recommendations specific to your soil.

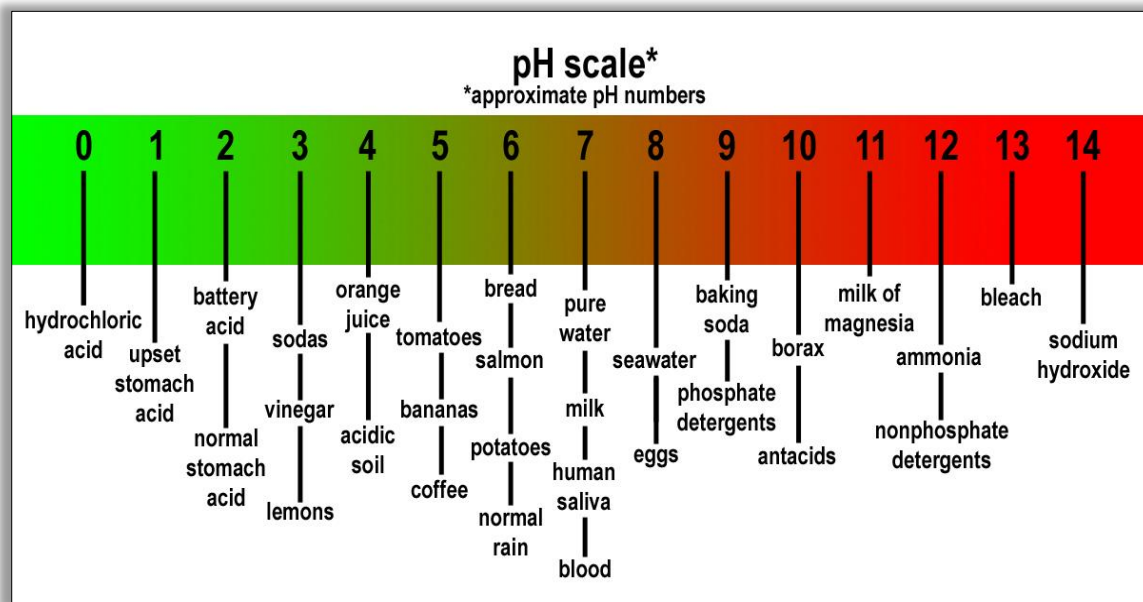
## The Good News About Clay

There is good news about that heavy wet soil. Clay soils tend to be more fertile than other soils such as sand. The clay pulls together in positive ions. This means it is more likely to hold nutrients. In summer, clay holds in the moisture, and plants don't dry out as fast as they do in sandy soil.

## The Bad News About Clay Soil

Clay soil may have an overly low (acidic) or high (alkaline) pH value, which makes it hard for nutrients to be absorbed. Taking a soil test is the best way to find out the pH of your soil. Ideally, you want your soil to be in the range of 5.5 to 6.5. If your soil is not in the range, then you can start adding things to help adjust it. Soil pH does not change overnight, but working towards that goal is always good.

Clay soil holds moisture. This can be great in August but detrimental during spring planting. Clay soil tends to harbor moisture diseases such as root rot and verticillium wilt. Furthermore, wet soils will leach out nitrogen so that it is not available for your plants.



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