# Fertilizing Native Azaleas

## *By Marshall Adams—Marietta, Georgia*

Before you fertilize native azaleas there are three types of tests, you need to do: a tissue analysis test, a soil test, and a pH (potential Hydrogen) test. Doing these three tests will save you money and save your native azaleas. Further, these tests together will save you a lot of frustration.

Years ago, I had to learn this the hard way. I like plums and peaches, so I planted some plum and peach trees. I just went to the store, bought fertilizer with NPK (nitrogen, phosphorus, and potassium) and lime as the base and just poured it on them. I managed to burn and kill a few of them with too much nitrogen and after a few years of poor growth, poor fruit, and yellow leaves and even more fertilizer, I realized I had wasted a lot of time and money.

A friend suggested that I do a plant tissue analysis test for micronutrients. It's just like when I get an annual physical. They do a blood test to check me for any deficient nutrients. The cost would be only $10.00. What a deal. I read up on how to do the test (now the test details are online under "AESL Plant Tissue Analyses" at uga.edu). I took a leaf sample and gave it to my local extension agent. They send it off to a lab over in Athens, Georgia, with the $10.00. (Note: The price is now $25.00)

I have watched fireworks and learned that different elements and metals burn with different colors. The lab would burn the leaves and pass the light from the flame through a prism. The prism separates out the different colors (frequencies) of the flame into a spectrum. The lab has a prism spectrum on file to compare what a healthy peach leaf colored spectrum of nutrients has, to compare to see if any nutrient is missing in my leaves. The report showed I had all the micronutrients for a healthy peach, but no zinc. I had wasted a lot of plants, fertilizer, lime, money, and time when all I needed was zinc. The report also said that the soil in my area was low in zinc. I bought a 50 lb. bag of zinc sulfate and put only a little around each tree. I was shocked at what happened. In three weeks, the trees had new growth and the leaves had turned from yellow to dark green. I was ecstatic. This tiny bit of zinc sulfate was working like magic. Then, an overnight disaster struck. The deer smelled the leaves and ate every leaf in their reach. Go figure! The deer had not paid any attention to these sickly yellow leaves for several years.

The second type of test is a soil test where you determine if the soil is deficient of one or more of the elements that are needed for the plant you are trying to grow. If the test shows deficiencies, then you can make sure your fertilizer contains those micronutrients and not waste using more general fertilizer on plants that is not needed, much as I did, in just adding zinc sulfate because my soil was low in zinc.


**Fig. 1 A pH meter is an inexpensive tool available online or at your local hardware store.**

It is possible that the soil test may show you have plenty of nutrients in your soil, but the plant's tissue analysis test may show it is deficient in the plant. What do you do then? This result means that the plant roots cannot break down and absorb the needed element or nutrient. This third test can help you solve this situation. This is a pH test. If the pH is not within the optimal range for azaleas, being too alkaline or acid, the azalea's roots can be prevented from absorbing that nutrient. You can do the pH test yourself, even on a pot of soil. You just need a pH meter that is available from Amazon or Wal-Mart for about $11.00 (see Fig. 1).

Our Southeastern native azaleas evolved in acid to slightly acid soils. These plants have evolved to extract nutrients from soil with a pH range from 4.5 to 6.00 having an average pH of 5.5, which is considered acidic.

The correct pH is essential for azaleas because it directly influences nutrient availability, microbial activity, root growth, and toxicity levels. Monitoring and adjusting soil pH to match the pH present when azaleas

evolved, allows the azaleas to extract the nutrients and minerals they need. Without the correct pH, even if the nutrient is available in the soil, the plant may not be able extract the mineral. Even worse a high pH could cause the plant to extract too much of minerals such as magnesium or aluminum until it becomes toxic.

You must know the optimal pH for the plant that you are trying to fertilize. Fertilizing plants with incompatible pH requirements planted nearby can be a problem. This is especially an issue with lawns and gardens where azaleas or blueberries are planted, that have been heavily fertilized over the years with general garden or lawn fertilizers that have a lime base. The soil is often too alkaline. Examples are fescue grass whose optimal growing pH is 6.7 and zoysia grass whose recommended pH is between 6 and 7. Both grasses' optimal growing pH is too alkaline for the azaleas or blueberries. So, if you followed a soil test for your lawn grass, you may be stunting or killing your azaleas. Bermuda grasses' optimal growing pH is too alkaline for azaleas and blueberries. Bermuda lawn grasses' recommended optimal soil pH levels are between 5.5 and 7.0. Centipede grass performs best in soil with a pH range of 5.0 to 6.0, which is within the range of azaleas. Your lawn service may be stunting or killing your azaleas. Know your optimal pH level for the plants you are growing and learn how to test with a $11.00 pH meter.

You can adjust the pH of your soil by adding sulfur around your azaleas or blueberries. This lowers the pH to make the soil more acidic. Add lime to increase the pH to make it more alkaline. But it is important to do this slowly and not overshoot. If you are buying potting soil, recognize that it almost never has the correct pH of 5.5 for azaleas. The pH is usually targeted toward annual flowers or garden plants, which require a much higher pH.

Commercial time-release fertilizers are expensive because these have polymer-coated granules that are water-soluble. This polymer coating breaks down slowly to feed your plants over a long period of time. They cost more, but save labor and prevent burning the plants with too much nitrogen at one time.

If this all sounds a little too complicated, then just do the old-fashioned fertilizer method and put chicken litter around your plants. Bird guano has been used for over a thousand years.

Chicken litter or manure has a couple of advantages that commercial fertilizers do not have. First is that fertilizers are very expensive because of energy costs. Local chicken litter or horse stall shaving can be free for a pickup truck load and your labor. Second, they attract hundreds of earthworms that aerate the soil around your azaleas. This will bring water and nitrogen to the roots, allowing rain and nutrients to easily penetrate the roots. And, third, they fertilize continuously over a whole season, continuously breaking down.

One final tip, apply any fertilizer in the late winter or early spring when any weeds are dormant, so you are not fertilizing weeds.

**Acknowledgments**
A previous version of this article appeared in the March 2024 issue of *Azalea Blooms,* the newsletter of the Azalea Chapter of the American Rhododendron Society.

**About the Author**
Marshall Adams (QuercusFalcata@Earthlink.net) is a retired software engineer. He spent 36 years hunting, collecting seed of native woody plants, and growing native plants in a hobby nursery in West Central Georgia. He lives with his wife Alice in Marietta, Georgia.



*So you want to learn more about the lovely Glenn Dale Hybrid Azaleas?*
***The Azalea Works** in Bethesda, Maryland, has two books by Bill Miller and the late Dick West which detail the fascinating story about B.Y. Morrison, the 454 Glenn Dale cultivars, and the unpublished PI and Bell Numbers by which they were managed. For details, see the website at:*
***www.theazaleaworks.com***
*While you're at it, visit the extensive collection of azalea, companion plant, and animal .jpg images.*