

Chapter 10

Use with Section 2

ENRICHMENT

● Soil

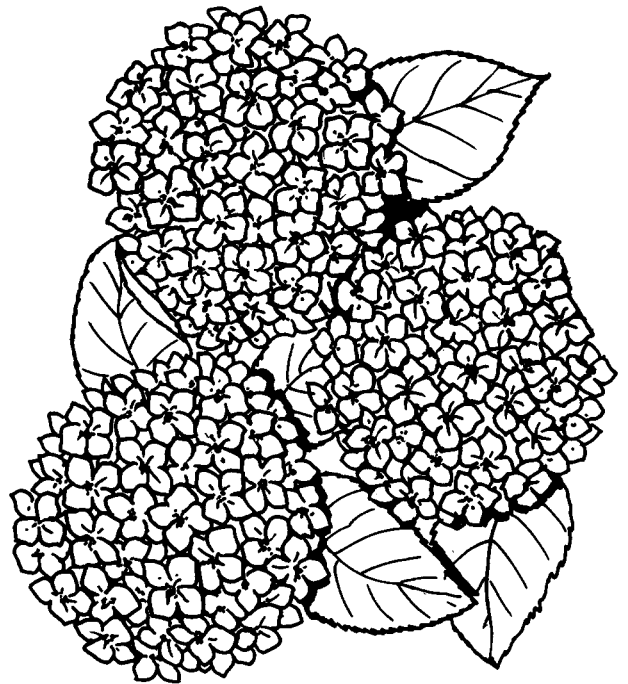
Analyzing Soil

The hydrangea is a bush with snowball-like flowers on it. When a certain kind of hydrangea grows on the East Coast of North America, the flowers are blue. When that same kind of hydrangea grows in the Midwest, the flowers are pink. What causes the flowers to be two different colors? The answer is the soil. Along much of the East Coast the soil is acidic. In the Midwest, some of the soil is alkaline—it has more calcium in it than acid soil does.

Some plants grow best in fairly acidic soil—blueberries, cranberries, and pineapples, for example. Other plants, like cotton and alfalfa, need a soil that is neutral—neither acidic nor alkaline. Most plants seem to do well in a mildly acidic soil.

Material can be added to soil to make it the right acidity for the crop that will be grown. To know what and how much material to add, the soil has to be tested. Samples of soil are analyzed by a machine to measure the soil's pH—the measure of how acidic or alkaline it is. Soil that has a pH between 0 and 7 is acidic; the lower the number, the more acidic the soil. Soil that has a pH of 7 is neutral. Soil that has a pH between 7 and 14 is alkaline; the higher the number, the more alkaline the soil. Actually, in nature, soils don't reach the extremes of 0 and 14. They range between about 3.5 and 11.

If the soil needs to be more alkaline, then lime—a chalky material (not the fruit) containing calcium—is added to the soil. If the soil needs to be made more acidic, sulfur can be added to the soil. Most of the time, the soil needs to be made more alkaline rather than more acidic.



1. How would you classify a soil that has a pH of 8? _____
2. Suppose a soil has a pH of 5.5, but the crop to be grown does best in a soil with a pH of 6.
What would you do? _____
3. If a hydrangea has flowers that are part pink and part blue, in what kind of soil would you suspect it was planted? _____
4. Why is it important for a farmer to know the pH of soil? _____

