

How Do I Change The Color of My Hydrangea Flowers?

One of the top questions we get is “How do I change the color of my Hydrangea blooms?” Not all Hydrangeas can be color-manipulated. For example, white Hydrangeas cannot be manipulated to pink or blue. Only those varieties containing color pigments can be changed. Color is dependent upon the pH of the soil solution in and around the plant. (pH is pronounced like the letters). By altering pH, we affect the color pigments and alter bloom color.

What is “pH” and what’s it do?

pH expresses the level of soil acidity or alkalinity as measured on a scale of zero to 14. A pH of 7 is neutral; neither acidic nor alkaline. Numbers below 7 indicate increasingly acidic conditions. Numbers above 7 designate progressively more alkaline situations. pH does not change what elements are in a soil, rather, it affects the availability of those elements to plants. In other words, while an element may be present in a soil, that doesn't mean it's being absorbed. The absorption of elements is determined by how much of the element is there, and if the pH is at a point on the scale to make the element available. Picture the pH scale as a house with many locked rooms. Each room contains a specific element that your plant might or might not need. Now, in another part of the house hang various combinations of keys on the wall. To open the rooms containing the elements you need, you must obtain the correct combination set of keys. In the case of Hydrangea color, the right combination of keys are obtained by getting the soil chemistry to a specific point on the pH scale.

What are these elements and what are their importances?

They are the chemical elements in the soil: nitrogen, potassium, phosphorus, iron, aluminum, boron, magnesium, calcium and so on. These elements interact with plants, “feed” plants, and support plant processes. Aluminum is the key element concerning Hydrangea color control. Color depends first and foremost on the availability of aluminum in the soil. Aluminum (when available at acidic pH readings) reacts with the pigments in the plant, turning flower sepals blue. Aluminum ions are increasingly available for plant absorption as the pH becomes more acidic. Blue tones can be obtained at a potent acid level. That level is attained by acidifying your soil to get it to a pH between 5.5 and 4.5. Inversely, deep pinks are obtained by approaching more neutral levels (the 6.0-6.5 pH range).

How can I acidify my soil and get blue tones?

For to-be-planted beds, deeply rotivate 1-2 pounds of aluminum sulphate per each Hydrangea plant to be installed. For established beds, spread aluminum sulphate over the root areas. Apply 1-2 pounds of aluminum sulphate per bush, twice: once in November then repeat in March. Stay towards the 1 pound rate for light sandy soils; favor the 2 pound rate for heavy clay soils. These rates should drop the pH by about 1.5 points. In other words it will lower a pH from 6.5 to a pH of 5.0. Once you have attained the desired pH (and bloom color), does it need to be maintained? That depends on the soils in your area as well as any amendments brought into your site. Soils in the east and northwest United States tend to be naturally acidic, made so by frequent rains washing natural acids from the atmosphere. Soils in the drier mid-west and southwest tend to be alkaline. But that won't apply to each locale and certainly not to each site. Some localized regions have deposits of calcium rock, giving their soils an alkalinity. And concrete foundations and walks are made primarily of limestone that can leach into your soil. So, watch your plants. If they seem to be losing blue tone, then you'll need to restock the soil with aluminum. You can do this by making an annual surface application as described above. A side note: fertilizers high in ammonium and potassium slightly enhance blue tones in Hydrangea.

How can I increase alkalinity and get pink tones?

For to-be-planted beds, deeply rotivate 1 lb. of ground limestone per each Hydrangea plant to be installed. For established beds, spread ground limestone over the root areas once in November and again in March. As a general guide, apply 1 lb. per bush at each application. Should any chlorosis occur (because iron starvation

can happen around a neutral pH), additions of iron will be needed. If this happens, mix 1 ounce of iron sulphate in a gallon of water and water it in around each plant. Note: high phosphorus fertilizers slightly enhance pink tones in Hydrangea.

How long does it take for changes to occur?

It isn't instantaneous. These elements are long lasting and slow-moving in the soil. Neither limestone nor aluminum are highly soluble so lots of watering and time are essential to move the material into the soil. Exhausting the elements stored in the soil solution as well as in a Hydrangea's plant system, and re-charging those systems with different elements, may take months. In other words, what you do this year will have a strong effect upon what you'll see happen next year.

How can I determine pH?

Most garden centers and agricultural supply stores carry home kits for testing of pH. They are easy, quick, inexpensive and relatively accurate. Do two or three tests in the area of concern, then use an average. For blue tones, you want to achieve (over time) an ideal pH of 4.5-5.5. For pink tones, do your applications until you reach a pH of 6.0-6.5.

As a final note, think safety. All the compounds mentioned here are intended for soil feeding, not foliar feeding, so always wash leaves following application if you should get the aluminum, calcium or iron dusts on them. And while aluminum is one of nature's most common elements it can also be a poison. It is not something our bodies need a lot of so don't use it around edibles.