



Technical Bulletin

Hydrangea Flower Color Explained

Hydrangeas are a very popular option for gardeners due to their large striking blooms and wide variety of colors. They are renowned for their ability to change color from pink to purple to blue, and it is important to understand what exactly causes this change.

Aluminum is one of the most abundant metallic elements and has a significant role in this color change. The expression of blue flowers in hydrangeas is related to the concentration of aluminum in the plant. Because elevated levels of aluminum can be potentially toxic to plants, certain species of hydrangea (primarily macrophylla or big leaf) will sequester the excess aluminum in their blooms, giving them a distinct blue color.

Most growers striving for blue hydrangeas will supply aluminum to their plants in the form of aluminum sulfate to ensure that there is plenty available in the rootzone. Jack's Classic 7-3-3 Hydrangea Blue contains 4% aluminum, so it is a perfect choice for growers who want to add supplemental aluminum while also supplying a complete source of macro and micronutrients. We recommend applying Jack's Classic 7-3-3 Hydrangea Blue at a rate of 1TBSP per gallon of water once per month and feeding regularly with either Jack's Classic 20-20-20 All Purpose or Jack's Classic 20-6-22 Petunia FeED during weeks between. It is important to begin applications of Hydrangea Blue so that aluminum is available before the plant starts blooming to have the best chance of achieving blue flowers.

The other major factor that determines the color of hydrangea blooms is pH. Substrate pH is related to the color of the blooms because aluminum is more available at a lower pH. Hydrangeas grown in substrate with a pH below 5.5 are much more likely to have blue blooms if there is aluminum available. Conversely, plants grown in a substrate with a pH above 5.8 will almost always be a shade of pink, while plants with a pH between 5.5-5.8 may be purple or have a combination of blue and pink flowers. Growers with very alkaline soil may want to consider growing their hydrangeas in pots where the pH can be controlled more readily with acidic additions like compost.

Other species of hydrangeas, like panicles, will not change their color to blue regardless of the pH or quantity of aluminum available. These varieties are primarily white, pink, and red and change color throughout the season based on temperature. Our Jack's Classic 12-15-30 Veggie FeED or 20-20-20 All Purpose are generally great choices for these types of hydrangeas to keep them well fed and looking good all season while maintaining a slightly higher pH in the root zone.



Example of a blue bigleaf hydrangea



Example of a panicle hydrangea

Tips for Growing	Blue Hydrangeas Keep pH below 5.5 Feed acidic fertilizer like Jack's Classic 20-20-20 All Purpose Apply a monthly feeding of Jack's Classic 7-3-3 Hydrangea Blue Grow in containers with acidic media, like peat
	Pink Hydrangeas Keep soil pH above 5.8 Feed a basic fertilizer like Jack's Classic 12-15-30 Veggie FeED Apply gypsum or lime to soil to raise pH