



DOVE
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Information

Hydrangea colour manipulation

Manipulation of the pH of a compost mix can bring about flower colour changes in plants such as Hydrangea.

Fertiliser addition plays a very important role in affecting colour change. The sepals of the hydrangea contain a red anthocyanin pigment that turns blue when some metals, including aluminium, are present in the soil or compost. The main factor in determining the length of time that the colour will last is the amount of the aluminium available in the compost. If this is not maintained to a certain level during the growing period of the plant, the sepals will eventually turn back to pink. Also, unless there is enough aluminium to react with the anthocyanin completely, there will be an intermediate colour produced, which is usually purple.

The ideal pH for producing blue flowers is between 4.5 and 5.0 as the availability of aluminium is more accessible to plant roots as the soil acidity increases (low pH). However, adding too much phosphorus into the mix 'locks' up the aluminium and makes it unavailable to the plant. High phosphorus and high nitrogen levels during flower development promote pink sepals. Therefore, a mix with low phosphorus and nitrogen (with a good supply of potassium) leads to blue sepals when the medium contains a significant amount of aluminium.

Plants already established in containers that have been bought inside after a period of low temperature to break bud dormancy, can have a drench of aluminium sulphate at a rate of 3kg/1,000 litres water at 14-day intervals to get the blue colour. You may need to do this drench three or four times and they are recommended throughout the growing period of the plants to ensure a clear blue colour. Also remember to take into account the pH of your nursery water when choosing the growing media lime rates.

If the plants are to be potted from liners into the final pot, then 2.5kg of aluminium sulphate per cubic metre of growing media incorporated with the base fertiliser is ideal to maintain a low pH and will provide sufficient levels of soluble aluminium. Be sure to check the compost pH regularly to ensure that it is at the correct level to allow the aluminium to remain available.

Read the label before you buy – use pesticides safely

The following information provides suggested growing media modifications that can achieve hydrangea blueing.

<i>Hydrangea colour desired</i>	<i>Growing media pH</i>	<i>Calcium carbonate in growing media</i>	<i>Blueing agent in growing media</i>
White	4.5 - 5.5	No	None
Blue	4.5 - 5.5	No	Aluminium sulphate
Pink	5.6 - 7.2	Yes	None
Red	6.5 - 7.2	Yes	None

<i>Hydrangea colour results</i>	<i>Growing media pH</i>	<i>Aluminium sulphate (ppm)</i>
Blue	4.6 - 5.1	2,375 - 897
Blue, tinged pink	5.5 - 6.4	338 - 187
Pink, tinged blue	6.5 - 6.7	215 - 201
Clear pink	6.9 - 7.4	<217

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