



Hydrangea macrophylla

Hydrangea macrophylla is a species of flowering plant in the family *Hydrangeaceae*, native to Japan. It is a deciduous shrub growing to 2 m (7 ft) tall by 2.5 m (8 ft) broad with large heads of pink or blue flowers in summer and autumn.

Common names include bigleaf hydrangea, French hydrangea, lacecap hydrangea, and hortensia. It is widely cultivated in many parts of the world in many climates. It is not to be confused with *H. aspera* 'Macrophylla'.

Description

The term *macrophylla* means large- or long-leaved. The opposite leaves can grow to 15 cm (6 in) in length. They are simple, membranous, orbicular to elliptic and acuminate. They are generally serrated.

The inflorescence of *Hydrangea macrophylla* is a corymb, with all flowers placed in a plane or a hemisphere or even a whole sphere in cultivated forms. Two distinct types of flowers can be identified: central non-ornamental fertile flowers and peripheral ornamental flowers, usually described as "sterile". A study of several cultivars showed that all the flowers were fertile but the non-ornamental flowers were pentamers while the decorative flowers were tetramers. The four sepals of decorative flowers have colors ranging from pale pink to red fuchsia purple to blue. The non-decorative flowers have five small greenish sepals and five small petals. Flowering lasts from early summer to early winter. The fruit is a subglobose capsule.

Colors and soil acidity

Hydrangea macrophylla blooms can be blue, red, pink, light purple, or dark purple. The color is affected by soil pH. An acidic soil (pH below 7) will usually produce flower color closer to blue, whereas an alkaline soil (pH above 7) will produce flowers more pink. This is caused by a color

change of the flower pigments in the presence of aluminium ions which can be taken up into hyperaccumulating plants.

Landscaping

In climates where *Hydrangea macrophylla* flowers, place in a mixed shrub border or at the back of a flower bed. Its rich foliage and large size make it a wonderful background for white or light colored flowers, even tall growing perennials and annuals. In warm climates *H. macrophylla* is good for adding a splash of early summer color to shady areas and woodland gardens. Minimal pruning is recommended for most prolific flowering. Flowers are easily air dried and are long lasting.

Chemistry

The various colors, such as red, mauve, purple, violet and blue, in *H. macrophylla* are developed from one simple anthocyanin, delphinidin 3-glucoside (myrtillin), which forms complexes with metal ions called metalloanthocyanins.

Possible uses

Amacha is a Japanese beverage made from fermented leaves of *Hydrangea macrophylla* var. *thunbergii*.

Hydrangeae Dulcis Folium is a drug made from the fermented and dried leaves of *H. macrophylla* var. *thunbergii* with possible antiallergic and antimicrobial properties. It also has a hepatoprotective activity in vitro and in vivo.

Hydrangea macrophylla is included in the Tasmanian Fire Service's list of low flammability plants, indicating that it is suitable for growing within a building protection zone.

Leaf extracts of *Hydrangea macrophylla* are being investigated as a possible source of new chemical compounds with antimalarial activity. Hydrangeic acid from the leaves is being investigated as a possible anti-diabetic drug as it significantly lowered blood glucose, triglyceride, and free fatty acid levels in laboratory animals