

Poinsettia

Euphorbia pulcherrima

Poinsettias have long been an essential part of North American Christmas celebrations and although not used in Australia until relatively recently, each year they become more and more popular. They are supposedly the most economically important potted plant anywhere in the world!! The common name, **Poinsettia**, honours botanist and physician, and the first American

envoy to Mexico, **Joel Roberts Poinsett**, who introduced the plant to the USA in 1828. In its natural environment, this colourful native of Mexico grows in a range of habitats from deciduous tropical forests along the Pacific coast to hot, seasonally dry forests in the interior.

The brilliant red 'flowers' are actually 'bracts', specialised leaves produced at the same time as flowers. The true flowers of Poinsettia are relatively inconspicuous, small and yellowish, with each tiny female flower surrounded by male flowers in cup-shaped groups (*cyathia*) which in turn are surrounded by the red bracts.



However, in the southern hemisphere, it is a little bit trickier to have red bracts for Christmas than it is in the northern hemisphere. Poinsettias are known as *short-day* plants and produce flowers when



nights are longer than days. They require a period of at least two months of *long nights* (more than 12 hours of darkness at less than 70°C) for flower production. In Australia, black cloth is placed over glasshouses so that the photoperiod can be artificially reduced. Cuttings are also treated with retardants to produce short, sturdy plants.

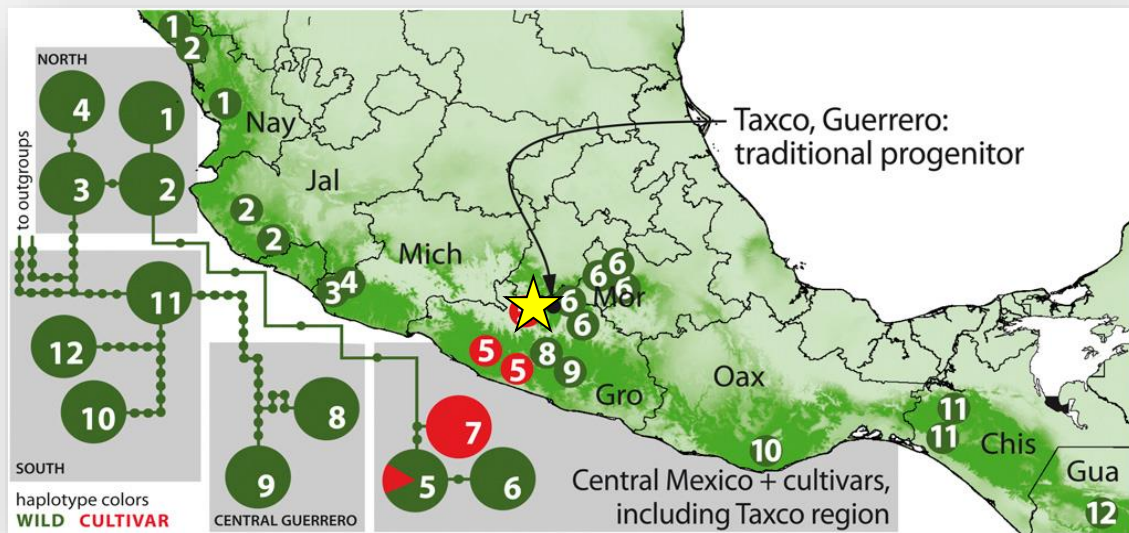
The development of the *real* flowers (that is, the tiny yellow flowers) inhibits the formation of the *green* pigment, chlorophyll, in the upper leaves and this leads to an accumulation of anthocyanin, the pigment that produces the *red* colour in the leaves (bracts).

Poinsettia was known to the Aztecs as **Cuitlaxochitl** which means *star flower* and used as a source of red dye and to treat fevers.

From the 17th century it has been used in Christmas celebrations in Mexico where it is known as *La Flor de la Nochebuena* – the Flower of the Holy Night.

Real flowers of Poinsettias are very small and form a cluster in the centre of the red bracts





Origins of modern-day poinsettias in Mexico's Guerrero State: L Trejo, T P F Arroyo, K M Olsen et al., 2012.

Poinsett is presumed to have collected the original *Euphorbia pulcherrima* specimens from Mexico's northern Guerrero State. A recent study by botanists from University of Mexico sequenced plastid and nuclear DNA regions and modelled the possible distribution of the plants in order to identify the wild populations that may have given rise to the more than 300 varieties of Poinsettia now in cultivation. They found that the combination of nuclear and plastid haplotypes that characterised the cultivars occurred only in northern Guerrero, confirming the account that attributed the original collections to Poinsett.

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Kaplan K, US Department of Agriculture: Poinsettias: Helping an icon bloom at the right time:

<https://www.usda.gov/media/blog/2015/12/01/poinsettias-helping-icon-bloom-right-time#more-62176>

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Brief Report 14(7): 671-674. DOI: [https://doi.org/10.1016/S0735-6757\(96\)90086-8](https://doi.org/10.1016/S0735-6757(96)90086-8)

Poinsettia Day: <http://www.poinsettiaday.com/>

Royal Botanic Gardens Kew: <http://www.kew.org/plants-fungi/Euphorbia-pulcherrima.htm>

Trejo L, T P F Arroyo, K M Olsen, L E Eguiarte, B Arroyo, J A. Gruhn & Mark E. Olson 2012 *Poinsettia's wild ancestor in the Mexican dry tropics: Historical, genetic, and environmental evidence*. American Journal of Botany 99(7): 1146–1157.

Wikipedia: <https://en.wikipedia.org/wiki/Poinsettia>

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<http://www.sciencedirect.com/science/article/pii/S0981942899800011>



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