



Yavapai County
Master Gardener Association



Poinsettias

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THE UNIVERSITY
OF ARIZONA



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The Poinsettia Plant



Presidential Bouquet



Poinsettia Origin



- ❖ Pronounced (poin-se-te-a) or (poin-se-ta)
- ❖ Plant species is *E.pulcherrima* in the Euphorbiaceae family
- ❖ Indigenous from Mexico to southern Guatemala
- ❖ Tropical plant growing on mid-elevation, Pacific-facing slopes
- ❖ Known as "Mexican flame flower" or "painted leaf"
- ❖ Genetic analyses shows wild populations in Guerrero and Oaxaca are the ancestors of cultivated poinsettias

Poinsettia Description



- ❖ A shrub or a tree with height between 2-13 feet red and green foliage
- ❖ The colored leaflike parts of the plant are *bracts* (often mistaken for flower petals) located below the flower
- ❖ The bracts' color is created through photoperiodism, in that they require darkness at least 12-14 hours at a time for 6–8 weeks in a row to change color
- ❖ They also require abundant light during the day for the brightest color
- ❖ The small yellow flowers are grouped in the cyathia in the center of the plant
- ❖ Poinsettias are “short day” plants and do not produce flowers year-round. It is the exposure to darkness that is critical to the formation of colorful bracts and flower buds.

Chemical Composition & Toxicity



- ❖ **Poinsettias are not poisonous!**
- ❖ Leaves contain pulcherrol & pulcherryl acetate which are components of latex (white milky substance)
- ❖ Triterpenes (tri-tur-peen) are also found in leaves which is being investigated as a foundation to drugs to treat Alzheimer's disease
- ❖ In 1913 the Honolulu Star-Bulletin wrongly alleged that the plant was deadly, and the legend spread and remains at this time
- ❖ In 1970 the US Food and Drug Admin erroneously released a bulletin stating "one leaf can kill a child"
- ❖ A study by the American Assoc. of Poison control showed no fatalities between 1985 -1992 related to poinsettia exposure
- ❖ It can induce asthma and allergic rhinitis in certain groups of people especially those that may be allergic to latex

Poinsettia Reproduction



- ❖ Little is known about the pollination in wild poinsettias
- ❖ Wasps are noted to visit the cyathia
- ❖ All flowers are unisexual (either male or female)
- ❖ The flowers are very small in size and are reduce even more in the small cluster of flowers making it difficult for bees to pollinate



<https://pixabay.com/>

Poinsettia Cultural History



- ❖ Aztecs called the plant “Flower that grows in the soil”
- ❖ Cultivated by the Aztecs for use in traditional medicine to reduce fever and for red dye
- ❖ Known in Mexico and Guatemala as *flor de Nochebuena* meaning Christmas Eve flower
- ❖ In Chili and Peru, it is known as the crown of the Andes
- ❖ 16th century Mexican legion introduced the plant as the Christmas Flower representing the Star of Bethlehem and the red color representing Christ’s crucifixion
- ❖ Since the 17th century Franciscan Friars in Mexico include Poinsettias in Christmas celebrations

Poinsettia Current History



- ❖ Derived its common name from Joel Robert Poinsett, botanist and the first United States Minister to Mexico in 1836
- ❖ Introduced the plant to the US in the 1820's when he sent plants to his greenhouses in South Carolina
- ❖ In 1834 the plant species *pulcherrima* was defined by German scientist Johann Klotzch and Carl Willdenow
- ❖ Became a commercially important crop in the early 1920's with the Ecke family in Encinitas, CA



The Ecke Family



- ❖ Albert Ecke emigrated to the Los Angeles area in 1906 and owned a dairy, an apple orchard and flowers.
- ❖ Intrigued with the Poinsettias that grew in the area, the flowers became the focus of the family business.
- ❖ In 1923, Paul Ecke Sr. developed a grafting technique, declared the plant as the Christmas flower and moved the family business to Encinitas and cultivated poinsettia stock outdoors
- ❖ In 1960's, Paul Jr. moved the business indoors and began potted plant production in greenhouses.
- ❖ He began promoting it on TV talk shows such as the Dyna Shore & The Tonight Show
- ❖ At its peak, the Ecke's produced more than 90% of the world's poinsettia stock



Harvesting Poinsettias 1960's





How to care for your Poinsettia



Caring for Poinsettias Indoors - No easy task!



- ❖ Place plant near a south or west window with plenty of bright indirect sunlight
- ❖ Avoid placing near cold or hot drafts, space heaters, etc.
- ❖ Avoid placing next to window in winter – will cause damage if below 50° – freezing temps will kill the plant
- ❖ Poinsettias grow well in moist soil with temperatures between 60-70° F
- ❖ Water when soil surface feels dry to touch or pot is light weight – plant will quickly wilt when dry
- ❖ Remove decorative foil when watering – never let plant sit in excess water

Caring for Poinsettias post Holidays



- ❖ Do not fertilize during the holidays – start when you see new growth
- ❖ Fertilize with all-purpose plant food at half of recommended strength every 3-4 weeks
- ❖ Wait until after late spring if transplanting outside
- ❖ Transfer into a container 2-4” larger than original pot
- ❖ Use soil mix with good drainage – mix in peat moss & compost to help maintain moisture
- ❖ Keep soil moist but not soggy

What is wrong with my Poinsettia



❖ The most common causes of a dying Poinsettia are:

- Overwatering
- Underwatering
- Fertilization
- Temperature issues
- Lightening issues
- Disease



Watch for the signs!



- ❖ Wilting or curling leaves
 - First sign of plant stress
 - Can start from top-down, bottom-up or random
 - Can wilt one day and perk up the next day

- ❖ Poinsettia leaf fall
 - Indicates prolonged stress
 - Older less productive leaves will fall first when starved for water or nutrients to protect new growth



Watch for the signs! (con't)



- ❖ Blackened leaves
 - Sign of rotting, disease or severely damaged
 - Overexposure to light or fertilizer can cause black burns or crisp edges on the leaves
 - Disease will cause leaves to be speckled, streaked or blistered

- ❖ Leaves turning yellow - chlorosis
 - Starts with bracts color fading
 - Green leaves turn drab yellow or brown
 - Caused by water or nutritional issues



Overwatering



- ❖ Most common cause of a dying poinsettia
- ❖ Roots require small pockets of air in the soil to function
- ❖ Examine the soil:
 - Is it soggy or smells stagnant
 - Is there standing water in the drip tray or is the pot heavy
 - Inspect the roots- there should be many fine cream colored roots
- ❖ If damage is minor, drain out excess water and let soil dry (this could take up to 2 weeks)
- ❖ Begin watering when the top 2 inches of soil are dry

Underwatering



- ❖ Same signs as overwatering such as dropping or shedding leaves
- ❖ The clue is dry, crumbly soil
- ❖ Solution:
 - Water the plant thoroughly, preferably from below where the roots need it the most.
 - Place the pot in a tub with water half-way to the top of the pot
 - Soak for 15-30 minutes, drain for another 15 minutes
 - Place the pot on a tray with pebbles so it does not sit in water

Poor Quality Soil and Drainage



- ❖ Poinsettias need high organic content soil that drains well but retains moisture
- ❖ There should be at least 3 drainage holes evenly spaced
- ❖ Soil that does not drain well becomes mud and air pockets disappear
- ❖ Examine the soil:
 - Re-pot the plant in high quality potting soil with perlite and moss. (perlite protects the air spaces)
 - Use plastic nursery pots if indoors.

Light Exposure Issues



- ❖ Poinsettias like bright but indirect light 4-6 hours per day
- ❖ Too much direct sunlight will scorch the leaves
- ❖ Too little light weakens the plant so it is unable to grow and defend against pests or illness
- ❖ Solution:
 - Place in south or west facing rooms near a window but not with direct light or excessive radiant heat

Exposure to Drafts



- ❖ Being a tropical plant, Poinsettias dislike the cold such as air conditioning or a cold window pane
- ❖ They will quickly wilt and potentially die
- ❖ Solution:
 - Place in an area free of cold drafts with temperatures between 60-75°
 - Consistency is essential



Lack of Humidity



- ❖ Did I mention that Poinsettias are a tropical plant – they also like a more humid environment
- ❖ Wilting leaves and crisp browning leaf edges point to lack of humidity
- ❖ Solution:
 - Maintain atmospheric humidity at 30% or higher
 - Place container on a pebble tray filled with water
 - Place a humidifier in the area

Root Rot



- ❖ Root rot is caused from overwatering and allowing the roots to sit in water for an extended period.
- ❖ Due to lack of oxygen the roots eventually die because of the buildup of naturally occurring fungi which devour the roots
- ❖ Wilted, yellowing & falling leaves are the clue to check the roots
- ❖ Solution:
 - Remove the plant from its pot, rinse off old soil and remove damaged black or brown roots
 - Re-pot the plant in a sterilized plastic pot with high quality potting soil with perlite and moss.

Lack of Nutrients



- ❖ Poinsettias must be feed regularly to maintain the color in their leaves and bracts
- ❖ Leaves will turn yellow and edges turn crisp if plant is malnourished
- ❖ Beware, if you use too much fertilizer, leaves will also turn yellow and die
- ❖ Solution:
 - Fertilizer is important once new growth develops
 - Once a month liquid fertilizer at half strength to avoid fertilizer burn
 - Use seaweed and fish emulsion as it contains more micronutrients
 - Stop using after November and start up in spring



Nutrients (con't)



- ❖ **Magnesium Deficiency** – common with poinsettias. Symptoms are scorching on the edges and tips of leaves and yellowing between the leaf veins
 - Apply 3 Tb. Per sq/yard of Epsom salts in spring and summer
- ❖ **Molybdenum Deficiencies** – Molybdenum (Mo) is the most commonly deficient micronutrient in poinsettia nutrition. Typical symptoms are a yellowing of the leaf margin, progressing to marginal leaf burn.
 - A component of the fertility regime is 1/3 cup of ammonium molybdate dissolved in 1 gallon of water.

Nutrients (con't)



- ❖ **High pH.** High substrate pH can induce nutrient problems in poinsettias. The recommended pH range is 5.8-6.5. Iron deficiency is the most common problem at a pH above 6.5, at which point new leaves will exhibit interveinal chlorosis (yellowing).
- ❖ Lower the pH with an iron sulfate drench or by using an acidic fertilizer. Iron deficiency can also occur with root death, over-irrigation, poor substrate drainage or insect damage. Inspecting the roots will help determine the cause of the problem.

Pests



- ❖ Outdoor pests that can attack Poinsettias include:
 - Aphids, mealybugs, soft scales, whiteflies, and spider mites
 - The Poinsettia Hornworm can quickly defoliate the entire plant
- ❖ Solution:
 - ❖ Quarantine the plant
 - ❖ Treat with appropriate insecticide
 - ❖ Hand pick off hornworms



University of Florida, Agriculture Dept.

Diseases



- ❖ Poinsettias are susceptible to mostly fungal but some bacterial and viral diseases
- ❖ Fungal disease includes Pythium root rot, Rhizoctonia root or stem rot, black root rot, scab, powdery mildew and Botrytis blight (gray mold)
- ❖ Bacterial includes soft rot and bacterial canker
- ❖ Viral disease is Mosaic virus which can be desirable as it keeps the plant shorter with more flowers
- ❖ Solution:
 - ❖ Quarantine the plant
 - ❖ Trim away infected leaves and treat according to fungicide instructions – a broad spectrum plant medicine is your best defense



Fungal Disease



Disease	Symptom
<i>Pythium root rot</i>	Sudden wilting and die-back.
<i>Rhizoctonia</i>	Brown lesions on leaves and stems. Yellow leaves, leaf drops, poor growth, and death. It also causes root and crown rot.
<i>Botrytis</i>	Spots and lesions on leaves, cankers on stems
<i>Spot anthracnose</i>	Unusually tall or long growth. Scabs
<i>Bacterial leaf spot and blight</i>	Wet lesions, yellow, turning to brown. Leaf deformities, yellowing leaves, and leaf drop
<i>Phytophthora</i>	Wilting, stunting, crown dieback, and leaf shedding. Black or gray, papery lesions on leaves.

Poinsettia scab (*Sphaceloma poinsettiae*) is a fungal disease that causes circular, cream-colored spots on the midribs and veins of leaves and raised lesions on stems and leaf petioles. Scab is most prevalent in the summer. Plants growing in poorly drained or over-watered areas are often killed by fungi that rot the roots and stems.



Managing your Poinsettia Plant



- ❖ Place in indirect sunlight and fertilize when new growth appears and mid summer and early fall
- ❖ Check routinely for pests
- ❖ Prune off dead plant parts & pinch back to about 5" tall to promote fuller growth
- ❖ Labor Day - if outside, move indoors to area that gets 6 hrs of sun and fertilize $\frac{1}{4}$ of recommended strength
- ❖ Autumn Equinox - give the plant 16 hrs of uninterrupted total darkness and 8 hrs of bright light
- ❖ Maintain at 60-65° and continue to water
- ❖ Thanksgiving – Discontinue dark time, reduce water and place where plant can get at least 6 hours of direct light





Still interested in getting a Poinsettia this Holiday?

There are a variety of Poinsettias
to choose from
Buy from a reputable nursey!



Jubilee Red



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The Jester



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Winter Rosebud



The Ecker Flower Fields Carlsbad, CA

Poinsettia Flag





Questions?

Thank You!



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