



Sunflower

The Goddess of Flowers

The sunflower (*Helianthus annuus*) is an annual plant in the family Asteraceae native to the Americas, with a large flowering head. The term "sunflower" is also used to refer to all plants of the genus *Helianthus*, many of which are perennial plants.

Description A flower is actually a head of numerous florets crowded together. The outer florets are the sterile ray florets and can be yellow, maroon, orange, or other colors. The florets inside the circular head are called disc florets, which mature into what are traditionally called "sunflower seeds," but are actually the fruit (an achene) of the plant. The inedible husk is the wall of the fruit and the true seed lies within the kernel.

The florets within the sunflower's cluster are arranged in a spiraling pattern. Typically each floret is oriented toward the next by approximately the golden angle, 137.5, producing a pattern of interconnecting spirals where the number of left spirals and the number of right spirals are successive Fibonacci numbers. There are 34 spirals in one direction and 55 in the other; on a very large sunflower there could be 89 in one direction and 144 in the other.

Heliotropism Sunflowers in the bud stage exhibit heliotropism. At sunrise, the faces of most sunflowers are turned towards the east. Over the course of the day, they follow the sun from east to west, while at night they return to an eastward orientation. This motion is performed by motor cells in the pulvinus, a flexible segment of the stem just below the bud. As the bud stage ends, the stem stiffens and the blooming stage is reached.

Sunflowers in the blooming stage are not heliotropic anymore as the stem freezes and leaves start lose their green color. The wild sunflower typically does not turn toward the sun, its flowering heads may face many directions when they are matured. However, the leaves typically exhibit some heliotropism.

Francisco Pizarro found it in Tahuantinsuyo, Peru, where the natives Incas worshipped the sunflower in image as a symbol of the Sun God.

At the beginning of the 16th century, gold figures of this flower as well as its seeds were brought to Europe. The sunflower was first domesticated in Mexico, by at least 2600 BC and it may have been domesticated a second time in the middle Mississippi Valley, or been introduced there from Mexico at an early date, as corn was. The earliest known examples of a fully domesticated sunflower north of Mexico have been found in Tennessee and date to around 2300 BC.

Many indigenous American peoples used the sunflower as the symbol of the sun deity, including the Aztecs and the Ojomi of Mexico and the Incas in South America.

Gold images of the flower, as well as seeds, were taken back to Spain early in the 16th century. Some researchers argue that the Spaniards tried to suppress cultivation of the sunflower because of its association with solar religion and warfare. During the 18th century, the use of sunflower oil became very popular in Europe, particularly with members of the Russian Orthodox Church because sunflower oil was one of the few oils that was not prohibited during Lent. To

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45 cm apart and 2.5 cm deep. Sunflower "whole seed" are sold as a snack food, after roasting in ovens, with or without salt added.

Sunflowers can be processed into a peanut butter alternative Sunbutter and are much consumed especially in China, Russia, the United States, the Middle East and Europe. In Germany, it is mixed together with rye flour to make Sonnenblumenkernbrot (sunflower whole seed bread), which is quite popular in Europe. It is also sold as food for birds and can be used directly in cooking and salads.

Sunflower oil, extracted from the seeds, is used for cooking, as a carrier oil and to produce margarine and bio-diesel, as it is cheaper than olive oil.

A range of sunflower varieties exist with differing fatty acid compositions; some "high oleic" types contain a higher level of healthy monounsaturated fats in their oil than even olive oil.

The cake remaining after the seeds have been processed for oil is used as a livestock feed. Sunflowers also produce latex and are the subject of experiments as an alternative crop for producing hypoallergenic rubber.

Sunflowers most commonly grow to heights between 2.5 and 3.5 m (8-12 ft). The stem can grow as high as 3 meters (9 3/4 ft), and the flower head can reach 30 cm (11.8 in) in diameter with the "large" seeds. Scientific literature reports, from 1567, that a 12-m (40 ft), traditional, single-head, sunflower plant was grown in Padua.

The same seed lot grew almost 8 m (26 ft) at other times and places (e.g. Madrid). Much more recent feats (past score years) of over 8 m have been achieved in both Netherlands and Ontario, Canada.

The sunflower is the state flower of the US state of Kansas, and one of the city flowers of Kitakyushu, Japan. It is also one of the national emblems of Russia. The sunflower is often used as a symbol of green ideology, much as the red rose is a symbol of socialism or social democracy. The sunflower is also the sym-

Bee taking nectar from a Sunflower

Sunflower (*Helianthus annuus*)

Red Sunflowers

Baby seedlings growing

The funny side



Following the leader



Love is in the air



Who said no dogs allowed?



Trick-o-Treat



"Deer" Doggy

Please send us your rescue stories and animal jokes to demid5@gmail.com or to 'Flowers n Pets', No. 35, D.R.Wijewardene Mawatha, Colombo 10

The thrilling trio

NILMA DOLE

Working at the World Trade Centre was never easier now that the triple trio - Blackie, Lassie and Rover have taken security jobs at the most busiest landmark skyscraper in Colombo.

The cute and lovable pooches at the World Trade Centre make your working life stress-free and happy and will give you all the more reason to smile on a Monday morning.

The first privately-trained dogs that will sniff for any explosives or bombs, the triple trio ensure that security checks on vehicles are done with utmost care and concern. Priyantha and Attanayake are the doggie trainers who say that working with the wonderful wagers is a delight as they are fun to handle but can be quite naughty when they are up to their mischief when they are off-duty.

Any trace of explosives or threatening device is quickly detected and the dogs are real professionals at what they do. "Our motto is to protect and serve the people of the World Trade Centre and our canine friends believe in this" said Priyantha. Both Lassie and Rover are cream-coloured white Labradors and Blackie is a black Belgium Shepherd and they are given stations to guard the WTC at stipulated points.

"Rover is the latest addition to the family and we need to get young dogs to be trained because the older one, 6-year-old Blackie is now not up to doing her duty as before" said Priyantha. Lassie is 2 years old friendly dog and gives her paw when we greet her with a friendly bark. Thankfully, there have been no reports of threats to the WTC, and the dogs come in handy if anything is amiss. "Preven-

tion is better than cure" says Indradeva Mendis, the Manager-Facilities Management for Overseas Realty (Ceylon) Limited who manage the WTC.

He said that the WTC has effective security measures and have invested in high-technology state-of-the-art cameras to give 100 per cent safety and checking for all patrons of the WTC. "We are committed to giving the WTC employees and those who frequent the premises a guaranteed assurance of safety" he said. As they

can't always depend or enlist the services of the dogs from the armed forces, they thought it best to train their dogs in-house.

Anni, the WTC Marketing Manager said that the dogs are treated like their royalty and taking care of them comes at a price that they are willing to pay as they are the WTC's best friends. She said, "Our pets are given a special diet and we get rather worried even if they get a little sick as we love them a lot". One of the main aspects these dogs are

trained to do is warn their trainers of a potential threat without causing a commotion.

"Having being their trainers from the time that they were puppies, our trio knows when to warn us and we can read their body language when something happens out of the ordinary" said Priyantha.

Rover is the pooch who can't wait because he's the younger member of the family and likes doing everything naughty. "Rover is an eight month old male Labrador and we need to make an extra effort to train him as he can't sit in one place" said Attanayake.

Blackie is the shy type but also known to all as the lazy one because she has been trained to do her job without interacting with people. When asking whether a special license was required to have these dogs, Indradeva highlighted, "There is a permit that we have but no special license is really required". People can now be guaranteed that their lives are safe with the Terrier Trio -Rover, Lassie and Blackie!



Rover at work



The terrific trio - Lassie, Rover and Blackie!