

# Sunflower

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**Title:** Sunflower

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**Interpretive Summary:** Global sunflower production is estimated to be 23 million hectares in 60 countries. It is the second largest hybrid crop, and the fifth largest oilseed crop. Sunflower cultivation continues to expand onto less productive areas with lower-fertility soils and less favorable climates, which has reduced the average global yield of sunflower. The challenge for the sunflower breeding community is to breed sunflower adaptable to these marginal areas and at the same time increase seed yield. Research is the key to solving this problem. Basic information about available genetic resources and breeding progress using wild species helps breeders make better and more efficient and effective use of the available genetic resources. The objectives of the chapter on sunflower were to summarize the available genetic resources and breeding progress using wild species, and to serve as a general introduction for the remaining chapters of the book entitled Genetics, Genomics, and Breeding of Sunflower. Specific topics covered include a brief history of the crop, its economic importance, nutritional information, academic importance as a model species for research, description and use of sunflower germplasm, origin, taxonomy, domestication, dispersion, plant structure and growth habit, cytogenetics, genetic resources, germplasm utilization and enhancement, conventional breeding, and application of molecular techniques to breeding. Significant advances have been made in understanding the origin, domestication, and organization of the genetic diversity, characterization, and screening methods for abiotic and biotic stresses. Useful germplasms have been identified for many agronomic traits and some molecular markers for indirect selection of favorable alleles are becoming available. Sunflower researchers will have to strive to combine the best conventional and modern molecular approaches to improve sunflower germplasm to keep sunflower an economically viable global crop. This will require a multidisciplinary team approach and a commitment to a long-term integrated genetic improvement program in sunflower.



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**Technical Abstract:** The world production of sunflower is estimated at 23 million hectares in 60 countries. It is the second largest hybrid crop, and the fifth largest oilseed crop. Sunflower cultivation continues to be pushed onto lower-fertility soils and other marginal environments where drought and high or low temperatures continually take their toll on the yield per unit area. The challenge for the sunflower breeding community is to breed sunflower adaptable to these marginal environments and at the same time increase seed yield. The objectives of the chapter on sunflower were to summarize the available genetic resources and breeding progress using wild species, and to serve as a general introduction for the remaining chapters of the book entitled Genetics, Genomics, and Breeding of Sunflower. Specific topics covered include a brief history of the crop, its economic importance, nutritional information, academic importance as a model species for research, description and use of sunflower germplasm, origin, taxonomy, domestication, dispersion, plant structure and growth habit, cytogenetics, genetic resources, germplasm utilization and enhancement, conventional breeding, and application of molecular techniques to breeding. Significant advances have been made in understanding the origin, domestication, and organization of the genetic diversity, characterization, and screening methods for abiotic and biotic stresses. Useful germplasms have been identified for many agronomic traits and some molecular markers for indirect selection of favorable alleles are becoming available. Sunflower researchers will have to strive to combine the best conventional and modern molecular approaches to improve sunflower germplasm to keep sunflower an economically viable global crop. This will require a multidisciplinary team approach and a commitment to a long-term integrated genetic improvement program in sunflower.

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See more ideas about Sunflower, Sunflowers and daisies, Happy flowers. Sunflowers are very popular subjects to paint so today we will learn how to do just that. During the class you will learn How to approach complex petal structures, 2) How to paint the seeds, 3) How to paint the leaves. Sunflower Drawing Sunflower Art Watercolor Sunflower Watercolor Flowers Watercolor Cards Watercolour Painting Painting & Drawing Watercolors Art Drawings. Sunflowers. A fairly fast-growing flower, most sunflower varieties mature in only 85 to 95 days. The largest sunflower varieties grow to over 16 feet in height, while smaller varieties have been developed for small spaces and containers and rarely grow larger than a foot tall! Sunflowers make excellent cut flowers and many are attractive to bees and birds. At the end of the season, it's easy to harvest sunflower seeds for a tasty snack or for replanting (see instructions below). Sunflower is the common name for any of the plants of the genus *Helianthus* of the flowering plant family Asteraceae (known as the aster, daisy, or sunflower family). It also commonly is used specifically in reference to the annual plant *Helianthus annuus*, the common sunflower, which is characterized by a long stem and a large flowering head (inflorescence) with large seeds. The term sunflower also refers to this plant's seed-like fruit (commonly but incorrectly called the seeds) or the encased, edible