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# Horticulture

**Horticulture** (from Latin: *horti* + *culture*) is the art and science of growing fruits, vegetables, flowers, trees, shrubs and ornamental plants. Horticulture is commonly associated with the more professional and technical aspects of plant cultivation on a smaller and more controlled scale than agronomy. There are various divisions of horticulture because plants are grown for a variety of purposes.<sup>[1]</sup> These divisions include, but are not limited to: propagation, arboriculture, landscaping, floriculture and turf maintenance. For each of these, there are various professions, aspects, tools used and associated challenges -- each requiring highly specialized skills and knowledge on the part of the horticulturist.

Typically, horticulture is characterized as the ornamental, small-scale and non-industrial cultivation of plants; horticulture is distinct from gardening by its emphasis on scientific methods, plant breeding, and technical cultivation practices, while gardening, even at a professional level, tends to focus more on the aesthetic care and maintenance of plants in gardens or landscapes. However, some aspects of horticulture are industrialized or commercial such as greenhouse production or CEA.

Horticulture began with the domestication of plants c. 10,000 – c. 20,000 years ago.<sup>[2][3]</sup> At first, only plants for sustenance were grown and maintained, but as humanity became increasingly sedentary, plants were grown for their ornamental value. Horticulture emerged as a distinct field from agriculture when humans sought to cultivate plants for pleasure on a smaller scale rather than exclusively for sustenance.

Emerging technologies are moving the industry forward, especially in the alteration of plants to be more resistant to parasites, disease and drought. Modifying technologies such as CRISPR are also improving the nutrition, taste and yield of crops.

Many horticultural organizations and societies around the world have been formed by horticulturists and those within the industry. These include the Royal Horticultural Society, the International Society for Horticultural Science,<sup>[4]</sup> and the American Society of Horticultural Science.<sup>[5]</sup>

## Divisions of horticulture and types of horticulturists

There are divisions and sub-divisions within horticulture because plants are grown for many different reasons. Some of the divisions in horticulture include:



A horticulture student tending to plants in a garden in Lawrenceville, Georgia, March 2015



The Rock Garden, Leonardslee Gardens

- gardening
- plant production and propagation
- arboriculture
- landscaping
- floriculture
- garden design and maintenance
- turf maintenance
- plant conservation and landscape restoration.<sup>[6][7][8]</sup>

It includes the cultivation of all plants including, but not limited to: ornamental plants, fruits, vegetables, flowers, turf, nuts, seeds, herbs and other medicinal/edible plants. This cultivation may occur in garden spaces, nurseries, greenhouses, vineyards, orchards, parks, recreation areas, etc.

Horticulturists study and practice the cultivation of plant material professionally. There are many different types of horticulturists with different job titles, including: gardener, grower, farmer, arborist, floriculturist, landscaper, agronomist, designer, landscape architect, lawn-care specialist, nursery manager, botanical garden curator, horticulture therapist, and much more.<sup>[9]</sup> They may be hired by a variety of companies/institutions including, but not limited to: botanical gardens, private/public gardens, parks, cemeteries, greenhouses, golf courses, vineyards, estates, landscaping companies, nurseries, educational institutions, etc. They may also be self-employed.



Flower seedlings at a market in Breda, Netherlands

## History

Horticulture began with the domestication of plants 10,000–20,000 years ago and has since been deeply integrated into human history.<sup>[2][3]</sup> The domestication of plants occurred independently within various civilizations across the globe. The history of horticulture overlaps with the history of agriculture and history of botany, as all three originated with the domestication of various plants for food.<sup>[3]</sup> In Europe, agriculture and horticulture diverged at some point during the Middle Ages.<sup>[10]</sup>

### Early practices in horticulture

Early practices in horticulture include various tools and methods of land management, with different methods and plant types used for different uses. Methods, tools and plants grown have always depended on the culture and climate.

### Pre-colonized North and Central America

Many traditional horticultural practices are known, such as the Indigenous peoples of pre-colonized North America using biochar to enhance soil productivity by smoldering plant waste<sup>[11]</sup> – European settlers called this soil *Terra Preta de Indio*.<sup>[12]</sup> In North America, Indigenous people grew maize, squash, and sunflower, among other crops. Mesoamerican cultures focused on cultivating crops on a small scale, such as the milpa or maize field, around their dwellings or in specialized plots which were visited occasionally during migrations from one area to the next.<sup>[13]</sup> In Central America, the Maya involved augmentation of the forest with useful trees

such as papaya, avocado, cacao, ceiba and sapodilla. In the fields, multiple crops such as beans, squash, pumpkins and chili peppers were grown. The first *horticulturists* in many cultures were mainly or exclusively women.<sup>[14]</sup>

## Historical uses for plants in horticulture

In addition to plants' medicinal and nutritional value, plants have also been grown for their beauty, to impress and to demonstrate power, knowledge, status and even wealth of those in control of the cultivated plant material. This symbolic power that plants hold has existed even before the beginnings of their cultivation.<sup>[15]</sup>

There is evidence that various gardens maintained by the Aztecs were sacred, as they grew plants that held religious value. Plants were grown for their metaphorical relation to gods and goddesses.<sup>[10]</sup> Flowers held symbolic power in religious rites, as they were offered to the gods and given in ceremonies to leaders to demonstrate their connection to the gods.<sup>[10]</sup>

## Aspects of horticulture

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### Propagation

Plant propagation in horticulture is the process by which the number of individual plants is increased. Propagation involves both sexual and asexual methods.<sup>[16]</sup> Sexual propagation uses seeds, while asexual propagation involves the division of plants, separation of tubers, corms, and bulbs using techniques such as cutting, layering, grafting.<sup>[17]</sup>

### Plant selection

When selecting plants to cultivate, a horticulturist may consider aspects based on the plant's intended use, including plant morphology, rarity, and utility.<sup>[18]</sup> When selecting plants for the landscape, observations of the location must be made first. Soil type, temperature, climate, light, moisture, and pre-existing plants are considered when selecting plant material for the location. Plant selection may be for annual displays, or they may be for more permanent plantings. Characteristics of the plant – such as mature height and size, colour, growth habit, ornamental value, flowering time and invasive potential – finalize the plant selection process.

### Controlling environmental/growing variables

Environmental factors affecting plant development include temperature, light, water, soil pH, nutrient availability, weather, humidity, elevation, terrain, and micro-climate.<sup>[1]</sup> In horticulture, these environmental variables may be avoided, controlled or manipulated in an indoor growing environment.

### Temperature

Plants require specific temperatures to grow and develop properly. Temperature can be controlled through a variety of methods. Covering plants with plastic in the form of cones called hot caps, or tunnels, can help to manipulate the surrounding temperature. Mulching is also an effective method

to protect outdoor plants from frost during the winter. Inside, other frost prevention methods include wind machines, heaters, and sprinklers.<sup>[19]</sup>

## Light

Plants have evolved to require different amounts of light and lengths of daytime; their growth and development are determined by the amount of light they receive. Control of this may be achieved artificially with fluorescent lights in an indoor setting. Manipulating the amount of light also controls flowering. Lengthening the day encourages the flowering of long-day plants and discourages the flowering of short-day plants.<sup>[19]</sup>

## Water

Water management methods involve employing irrigation and drainage systems and controlling soil moisture to the needs of the species. Irrigation methods include surface irrigation, sprinkler irrigation, sub-irrigation, and trickle irrigation. Watering volume, pressure, and frequency are changed to optimize the growing environment. On a small scale, watering can be done manually.<sup>[19]</sup>

## Growing media and soil management

The choice of growing media and components to the media help support plant life. Within a greenhouse environment, growers may choose to grow their plants in an aquaponic system where no soil is used. Growers within a greenhouse setting will often opt for a soilless mix which does not include any actual components of naturally occurring soil. These mixes are generally very available within the industry and offer advantages such as water absorption and sterility.

Soil management methods are broad but include the applying fertilizers, planned crop rotation to prevent the soil degradation seen in monocultures, and soil analysis.<sup>[19]</sup>

## Control by use of enclosed environments

Abiotic factors such as weather, light and temperature are all things that can be manipulated with enclosed environments such as cold frames, greenhouses, conservatories, poly houses and shade houses. Materials used in constructing these buildings are chosen based on the climate, purpose and budget.

Cold frames provide an enclosed environment; they are built close to the ground and with a top made of glass or plastic. The glass or plastic allows sunlight into the frame during the day and prevents heat loss that would have been lost as long-wave radiation at night. This allows plants to begin growing before the growing season starts. Greenhouses and conservatories are similar in function but are larger and heated with an external energy source. They can be built out of glass but are now primarily made from plastic sheets. More expensive and modern greenhouses can include temperature control through shade and light control or air-conditioning and automatic watering. Shade houses provide shading to limit water loss by evapotranspiration.<sup>[19]</sup>

# Challenges

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## Abiotic stresses

Commercial horticulture is required to support a rapidly growing population with demands for its products.<sup>[20]</sup> Due to global climate change, extremes in temperatures, strength of precipitation events, flood frequency, and drought length and frequency are increasing. Together with other abiotic stressors such as salinity, heavy metal toxicity, UV damage, and air pollution, stressful environments are created for crop production. This is extrapolated as evapotranspiration is increased, soils are degraded of nutrients, and oxygen levels are depleted, resulting in up to a 70% loss in crop yield.

## Biotic stresses

Living organisms such as bacteria, viruses, fungi, parasites, insects, weeds and native plants are sources of biotic stresses and can deprive the host of nutrients.<sup>[21]</sup> Plants respond to these stresses using defence mechanisms such as morphological and structural barriers, chemical compounds, proteins, enzymes and hormones.<sup>[22]</sup> The impact of biotic stresses can be prevented using practices such as incorporate tilling, spraying or Integrated Pest Management (IPM).<sup>[23]</sup>

## Harvest management

Care is required to reduce damages and losses to horticultural crops during harvest.<sup>[24]</sup> Compression forces occur during harvesting, and horticultural goods can be hit in a series of impacts during transport and packhouse operations. Different techniques are used to minimize mechanical injuries and wounding to plants such as:<sup>[25]</sup>

- Manual harvesting: This is the harvesting horticultural crops by hand. Fruits, such as apples, pears and peaches, can be harvested by clippers
- Sanitation: Harvest bags, crates, clippers and other equipment must be cleaned before harvest.<sup>[25]</sup>

## Emerging technology

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Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR) has recently gained recognition as a highly efficient, simplified, precise, and low-cost method of altering the genomes of species.<sup>[26]</sup> Since 2013, CRISPR has been used to enhance a variety of species of grains, fruits, and vegetables. Crops are modified to increase their resistance to biotic and abiotic stressors such as parasites, disease, and drought as well as increase yield, nutrition, and flavour.<sup>[27]</sup> Additionally, CRISPR has been used to edit undesirable traits, for example, reducing the browning and production of toxic and bitter substances of potatoes. CRISPR has also been employed to solve issues of low pollination rates and low fruit yield common in greenhouses. As compared to genetically modified organisms (GMO), CRISPR does not add any alien DNA to the plant's genes.<sup>[28]</sup>



# Organizations

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Various organizations worldwide focus on promoting and encouraging research and education in all branches of horticultural science; such organizations include the [International Society for Horticultural Science](#)<sup>[4]</sup> and the [American Society of Horticultural Science](#).<sup>[5]</sup>

In the United Kingdom, there are two main horticulture societies. The [Ancient Society of York Florists](#) is the oldest horticultural society in the world and was founded in 1768; this organization continues to host four horticultural shows annually in [York](#), England.<sup>[29]</sup> Additionally, The [Royal Horticultural Society](#), established in 1804, is a charity in United Kingdom that leads on the encouragement and improvement of the science, art, and practice of horticulture in all its branches.<sup>[30]</sup> The organization shares the knowledge of horticulture through its community, learning programs, and world-class gardens and shows.

The [Chartered Institute of Horticulture](#) (CIH) is the Chartered professional body for horticulturists and horticultural scientists representing all sectors of the horticultural industry across Great Britain, Ireland and overseas. While horticulture is an unregulated profession in the United Kingdom, the title of Chartered Horticulturalist is regulated by the CIH.<sup>[31]</sup> The [Australian Institute of Horticulture](#) and [Australian Society of Horticultural Science](#) were established in 1990 as a professional society to promote and enhance Australian horticultural science and industry.<sup>[32]</sup> Finally, the [New Zealand Horticulture Institute](#) is another known horticultural organization.<sup>[33]</sup>

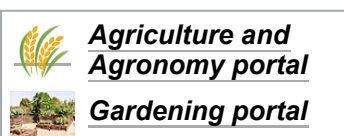
In India, the [Horticultural Society of India](#) (now the [Indian Academy of Horticultural Sciences](#)) is the oldest society; it was established in 1941 at [Lyallpur](#), Punjab (now in Pakistan) but was later shifted to [Delhi](#) in 1949.<sup>[34]</sup> The other notable organization in operation since 2005 is the [Society for Promotion of Horticulture](#) based at [Bengaluru](#).<sup>[35]</sup> Both these societies publish scholarly journals – [Indian Journal of Horticulture](#) and [Journal of Horticultural Sciences](#) for the advancement of horticultural sciences. Horticulture in the Indian state of [Kerala](#) is led by [Kerala State Horticulture Mission](#).

The [National Junior Horticultural Association](#) (NJHA) was established in 1934 and was the first organization in the world dedicated solely to youth and horticulture. NJHA programs are designed to help young people obtain a basic understanding of horticulture and develop horticultural skills.<sup>[36]</sup>

The [Global Horticulture Initiative](#) (GlobalHort) fosters partnerships and collective action among different stakeholders in horticulture. This organization focuses on horticulture for development (H4D), which involves using horticulture to reduce poverty and improve nutrition worldwide. GlobalHort is organized in a consortium of national and international organizations which collaborate in research, training, and technology-generating activities designed to meet mutually agreed-upon objectives. GlobalHort is a non-profit organization registered in Belgium.<sup>[37]</sup>

## See also

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- [Agricultural science](#)
- [Agronomy](#)
- [Floriculture](#)
- [Forest gardening](#)
- [Gardening](#)
- [Genetically modified trees](#)
- [Genomics of domestication](#)
- [Hoe-farming](#)
- [Horticultural botany](#)
- [Horticultural flora](#)
- [Horticultural oil](#)
- [Horticultural therapy](#)
- [Indigenous horticulture](#)
- [Landscaping](#)
- [Permaculture](#)
- [Plant nutrition](#)
- [Plug \(horticulture\)](#)
- [Tropical horticulture](#)
- [Turf management](#)
- [Vertical farming](#)

## References

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1. Rice, Laura W. (1980). *Practical Horticulture; A Guide to Growing Indoor and Outdoor Plants*. USA: Reston.
2. "Domestication" (<https://education.nationalgeographic.org/resource/domestication/>). *National Geographic*. October 19, 2023. Retrieved April 3, 2023.
3. Carey, John, ed. (2022-11-15). "Sapiens: A Brief History of Humankind". *Sunday Best*. Yale University Press. pp. 283–286. doi:10.12987/yale/9780300266689.003.0077 (<https://doi.org/10.12987%2Fyale%2F9780300266689.003.0077>). ISBN 978-0-300-26668-9.
4. "ISHS" (<https://web.archive.org/web/20120922225337/http://ishs.org/about>). Archived from the original (<http://ishs.org/about>) on September 22, 2012.
5. "ASHS" (<https://web.archive.org/web/20170811103104/http://www.ashs.org/>). ashs.org. Archived from the original (<http://www.ashs.org/>) on 2017-08-11. Retrieved 2016-06-11.
6. Preece, John E.; Read, Paul E. (2005). *The biology of horticulture: an introductory textbook* (2 ed.). John Wiley & Sons. pp. 4–6. ISBN 0-471-46579-8.
7. Arteca, Richard N. (2015). *Introduction to Horticultural Science* (2 ed.). Stamford, Connecticut: Cengage Learning. p. 584. ISBN 978-1-111-31279-4.
8. "Why Horticulture?" (<https://web.archive.org/web/20190502082101/https://horticulture.umn.edu/students/why-horticulture>). *Department of Horticultural Science*. University of Minnesota. Archived from the original (<https://horticulture.umn.edu/students/why-horticulture>) on 2019-05-02. Retrieved 2 May 2019.
9. "22 Jobs in Horticulture (With Salaries and Primary Duties)" (<https://www.indeed.com/career-advice/finding-a-job/careers-in-horticulture>). *Indeed*. February 2, 2024. Retrieved February 14, 2024.
10. Baeyer, E. *THE DEVELOPMENT AND HISTORY OF HORTICULTURE*. Encyclopedia of Life Support Systems (EOLSS) <https://www.eolss.net/sample-chapters/c09/e6-156-07-00.pdf>

11. Solomon, Dawit, Johannes Lehmann, Janice Thies, Thorsten Schafer, Biqing Liang, James Kinyangi, Eduardo Neves, James Petersen, Flavio Luizao, and Jan Skjemstad, *Molecular signature and sources of biochemical recalcitrance of organic carbon in Amazonian Dark Earths*, *Geochimica et cosmochemica ACTA* 71.9 2285–2286 (2007) ("Amazonian Dark Earths (ADE) are a unique type of soils apparently developed between 500 and 9000 years B.P. through intense anthropogenic activities such as biomass-burning and high-intensity nutrient depositions on pre-Columbian Amerindian settlements that transformed the original soils into Fimic Anthrosols throughout the Brazilian Amazon Basin.") (internal citations omitted)
12. Glaser, Bruno, Johannes Lehmann, and Wolfgang Zech, *Ameliorating physical and chemical properties of highly weathered soils in the tropics with charcoal – a review*, *Biology and Fertility of Soils* 35.4 219–220 (2002) ("These so called Terra Preta do Indio (Terra Preta) characterize the settlements of pre-Columbian Indians. In Terra Preta soils, large amounts of black C indicate a high and prolonged input of carbonized organic matter probably due to the production of charcoal in hearths, whereas only low amounts of charcoal are added to soils as a result of forest fires and slash-and-burn techniques.") (internal citations omitted)
13. von Hagen, V.W. (1957) *The Ancient Sun Kingdoms Of The Americas*. Ohio: The World Publishing Company
14. Thompson, S.I. (1977) *Women, Horticulture, and Society in Tropical America*. *American Anthropologist*, N.S., 79: 908–10
15. Pollan, Michael (2001). *The Botany of Desire*. Random House. ISBN 0-375-50129-0.
16. Artea, Richard N. (2014-02-14). *Introduction to Horticultural Science* (<https://books.google.com/books?id=84XAAgAAQBAJ&pg=PA109>). Cengage Learning. ISBN 978-1-305-17780-2. Archived (<https://web.archive.org/web/20230119181036/https://books.google.com/books?id=84XAAgAAQBAJ&pg=PA109>) from the original on 2023-01-19. Retrieved 2022-12-07.
17. Peter, K. V. (2009-02-05). *Basics Of Horticulture* ([https://books.google.com/books?id=NWMa741kG\\_gC&pg=PA338](https://books.google.com/books?id=NWMa741kG_gC&pg=PA338)). New India Publishing. ISBN 978-81-89422-55-4. Archived ([https://web.archive.org/web/20230119181048/https://books.google.com/books?id=NWMa741kG\\_gC&pg=PA338](https://web.archive.org/web/20230119181048/https://books.google.com/books?id=NWMa741kG_gC&pg=PA338)) from the original on 2023-01-19. Retrieved 2022-12-07.
18. "Horticultural Practices" (<https://www.saanich.ca/EN/main/parks-recreation-community/parks/horticulture/horticultural-practices.html>). *District of Saanich*. Archived (<https://web.archive.org/web/20221206230537/https://www.saanich.ca/EN/main/parks-recreation-community/parks/horticulture/horticultural-practices.html>) from the original on 2022-12-06. Retrieved 2022-12-06.
19. "Horticulture | Definition, Types, Techniques, & Uses | Britannica" (<https://www.britannica.com/science/horticulture>). *www.britannica.com*. Archived (<https://web.archive.org/web/20221207032531/https://www.britannica.com/science/horticulture>) from the original on 2022-12-07. Retrieved 2022-12-07.
20. Avinash Chandra Rai, ed. (2021). *Stress tolerance in horticultural crops: challenges and mitigation strategies*. Cambridge: Woodhead Publishing. ISBN 978-0-323-85363-7. OCLC 1251764903 (<https://search.worldcat.org/oclc/1251764903>).
21. Colin W. Wrigley; Harold Corke; Koushik Seetharaman; Jonathan Faubion, eds. (2016). *Encyclopedia of food grains* (Second ed.). Kidlington, Oxford, UK: Elsevier. ISBN 978-0-12-394786-4. OCLC 939553708 (<https://search.worldcat.org/oclc/939553708>).
22. Elhadi M. Yahia; Armando Carrillo-Lopez, eds. (2019). *Postharvest physiology and biochemistry of fruits and vegetables*. Duxford: Elsevier. ISBN 978-0-12-813279-1. OCLC 1061148070 (<https://search.worldcat.org/oclc/1061148070>).
23. Pantazi, Xanthoula-Eirini; Dimitrios Moshou; Dionysis Bochtis (2020). *Intelligent data mining and fusion systems in agriculture*. London: Elsevier. ISBN 978-0-12-814392-6. OCLC 1124761701 (<https://search.worldcat.org/oclc/1124761701>).



24. Hussein, Zaharan; Fawole, Olaniyi A.; Opara, Umezuruike Linus (2020-01-01). "Harvest and Postharvest Factors Affecting Bruise Damage of Fresh Fruits" (<https://www.sciencedirect.com/science/article/pii/S2468014119301943>). *Horticultural Plant Journal*. **6** (1): 1–13. Bibcode:2020HorPJ...6....1H (<https://ui.adsabs.harvard.edu/abs/2020HorPJ...6....1H>). doi:10.1016/j.hpj.2019.07.006 (<https://doi.org/10.1016%2Fj.hpj.2019.07.006>). hdl:10019.1/125649 (<https://hdl.handle.net/10019.1%2F125649>). ISSN 2468-0141 (<https://search.worldcat.org/issn/2468-0141>). S2CID 202847840 (<https://api.semanticscholar.org/CorpusID:202847840>). Archived (<https://web.archive.org/web/20221207070417/https://www.sciencedirect.com/science/article/pii/S2468014119301943>) from the original on 2022-12-07. Retrieved 2022-12-07.
25. Elhadi M. Yahia, ed. (2019). *Postharvest technology of perishable horticultural commodities*. Duxford: Elsevier. ISBN 978-0-12-813277-7. OCLC 1109725060 (<https://search.worldcat.org/oclc/1109725060>).
26. Liu, Yang; Zhang, Chunling; Wang, Xiaofei; Li, Xiuming; You, Chunxiang (2022-07-01). "CRISPR/Cas9 technology and its application in horticultural crops" (<https://doi.org/10.1016%2Fj.hpj.2022.04.007>). *Horticultural Plant Journal*. **8** (4): 395–407. Bibcode:2022HorPJ...8..395L (<https://ui.adsabs.harvard.edu/abs/2022HorPJ...8..395L>). doi:10.1016/j.hpj.2022.04.007 (<https://doi.org/10.1016%2Fj.hpj.2022.04.007>). ISSN 2468-0141 (<https://search.worldcat.org/issn/2468-0141>). S2CID 248462799 (<https://api.semanticscholar.org/CorpusID:248462799>).
27. Wang, Tian; Zhang, Chunjiao; Zhang, Hongyan; Zhu, Hongliang (2021-11-17). "CRISPR/Cas9-Mediated Gene Editing Revolutionizes the Improvement of Horticulture Food Crops" (<https://pubs.acs.org/doi/10.1021/acs.jafc.1c00104>). *Journal of Agricultural and Food Chemistry*. **69** (45): 13260–13269. Bibcode:2021JAF...6913260W (<https://ui.adsabs.harvard.edu/abs/2021JAF...6913260W>). doi:10.1021/acs.jafc.1c00104 (<https://doi.org/10.1021%2Facs.jafc.1c00104>). ISSN 0021-8561 (<https://search.worldcat.org/issn/0021-8561>). PMID 33734711 (<https://pubmed.ncbi.nlm.nih.gov/33734711>). S2CID 232302738 (<https://api.semanticscholar.org/CorpusID:232302738>). Archived (<https://web.archive.org/web/20221207050322/https://pubs.acs.org/doi/10.1021/acs.jafc.1c00104>) from the original on 2022-12-07. Retrieved 2022-12-07.
28. Mookerjee, Sonali (2023-11-30). "Gene-editing primer: What's the difference between CRISPR crops and GMOs?" (<https://geneticliteracyproject.org/2023/11/30/gene-editing-primer-whats-the-difference-between-crispr-crops-and-gmos/>). *Genetic Literacy Project*. Retrieved 2024-03-06.
29. "Ancient society of York Florists, oldest horticultural society in world, longest running horticultural show in world established 1768, flower shows in york yorkshire uk, horticultural shows in york yorkshire uk, vegetable shows in york yorkshire uk, fruit shows in york yorkshire uk, floral art shows in york yorkshire uk, handicrafts and baking shows in york uk, dahlia shows in york yorkshire uk, gladioli shows in york yorkshire uk, chrysanthemum shows in york yorkshire uk, auricula shows in york yorkshire uk, sweet pea shows in york yorkshire uk" (<http://www.ancientsocietyofyorkflorists.co.uk/>). *www.ancientsocietyofyorkflorists.co.uk*. Archived (<https://web.archive.org/web/20181112171754/http://ancientsocietyofyorkflorists.co.uk/>) from the original on 2018-11-12. Retrieved 2016-07-13.
30. "The Royal Horticultural Society, UK charity focussed on the art, science and practice of horticulture" (<https://www.rhs.org.uk/science>). *The Royal Horticultural Society Website*. Archived (<https://web.archive.org/web/20190526150441/https://www.rhs.org.uk/science>) from the original on 2019-05-26. Retrieved 2018-01-13.
31. "Chartered Horticulturist" (<https://www.regulated-professions.service.gov.uk/professions/chartered-horticulturist>). *GOV.UK*. Retrieved 3 January 2025.
32. "Australian Society of Horticultural Science – Australian Society of Horticultural Science" (<http://aushs.org.au/>). Archived (<https://web.archive.org/web/20230119180941/http://aushs.org.au/>) from the original on 2023-01-19. Retrieved 2016-06-11.
33. "RNZIH – Royal New Zealand Institute of Horticulture – Home Page" (<http://www.rnzih.org.nz/>). Archived (<https://web.archive.org/web/20230119180944/https://www.rnzih.org.nz/>) from the original on 2023-01-19. Retrieved 2012-10-26.
34. "Headquarters" (<https://www.iahs.org.in/headquarters/>). *IAHS*. Archived (<https://web.archive.org/web/20210819171137/https://www.iahs.org.in/headquarters/>) from the original on 2021-08-19. Retrieved 2021-08-19.

35. "SPH" ([https://sph.iihr.res.in/about\\_us.php](https://sph.iihr.res.in/about_us.php)). *sph.iihr.res.in*. Archived ([https://web.archive.org/web/20210819171138/https://sph.iihr.res.in/about\\_us.php](https://web.archive.org/web/20210819171138/https://sph.iihr.res.in/about_us.php)) from the original on 2021-08-19. Retrieved 2021-08-19.
36. "Home – NJHA" (<http://www.njha.org/>). Archived (<https://web.archive.org/web/20230119180942/https://www.njha.org/>) from the original on 2023-01-19. Retrieved 2016-06-11.
37. "The Global Horticulture Initiative" (<http://www.globalhort.org/>). Archived (<https://web.archive.org/web/20180413061926/http://www.globalhort.org/>) from the original on 2018-04-13. Retrieved 2016-06-11.

## Further reading

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- C.R. Adams, *Principles of Horticulture* Butterworth-Heinemann; 5th edition (11 Aug 2008), ISBN 0-7506-8694-4.

## External links

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- The Institute of Horticulture (<https://web.archive.org/web/20150907015307/http://www.horticulture.org.uk/>) (archived 7 September 2015)
  - ISHS – International Society for Horticultural Science (<http://www.ishs.org/>)
  - The Royal Horticultural Society (<http://www.rhs.org.uk/>)
  - British Library (<https://web.archive.org/web/20060626042637/http://www.bl.uk/collections/business/hortindu.html>) – information on the horticulture industry (archived 26 June 2006)
  - History of Horticulture (<https://web.archive.org/web/20120910033023/http://www.hort.purdue.edu/newcrop/history/default.html>) (archived 10 September 2012)
  - HORTIVAR – The FAO Horticulture Cultivars Performance Database (<http://www.fao.org/hortivar>)
  - Global Horticulture Initiative – GlobalHort (<http://www.globalhort.org/>)
  - Horticulture Information & Resource Library (<https://web.archive.org/web/20181004103903/http://www.hin.com.au/>) (archived 4 October 2018)
  - Plant and Soil Sciences eLibrary (<http://passel.unl.edu/>)
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