

## TOP CANADIAN ORNAMENTAL PLANTS. 1. OVERVIEW (PART 2)

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### TOP ORNAMENTAL PLANTS OF CANADA

The following lists the species (or genera in some cases) that are considered in this review to be the “top ornamental plants of Canada”. Brief taxonomic and geographical notes for the species are given. Christmas trees and lawn grasses are excluded from this list, but are dealt with separately below. The chief criterion for inclusion is that the species are sufficiently important economically that Statistics Canada issues annual production figures specifically for them (these figures are reported below). Almost everyone has a personal favourite ornamental, usually considers it the most beautiful of plants, and may be offended by its not being included here. There are also many ornamental plants that are very widely grown, but do not appear in the present list. To reiterate, the criterion for inclusion is simply the availability of statistical data on annual sales. In most cases a given species is included because its reported value is for a particular category of use (indoor potted plant production, bedding plants, or cut flowers), although some species (notably chrysanthemums, tulips, and roses are valuable for more than one category. Production statistics are not available for cedar, crabapple, lilac, and peony, which have been included on the basis that they are obviously among the most commonly cultivated ornamental plants in Canada. Trees not grown for floral display (except for cedar) have not been included, as information on the value of particular species for ornamental purposes is unavailable (probably the main expenditures for trees is based on arboriculture when they are mature, not on sales of young planting stock). No attempt is made here to rank order the importance of the top ornamentals, since data are not sufficient for this purpose. Roses (cumulatively) are the most important ornamental plants of Canada (indeed the world) from the point of view of sales. However, there are almost certainly more plants of Kentucky bluegrass in Canada than any other ornamental (indeed, possibly more than any other plant species), and given the widespread acreage of lawns in Canada, it may be the most important ornamental plant species economically.

**African violet** – *Saintpaulia* species, especially *S. ionantha* H. Wendl. (*S. kewensis* C.B. Clarke). [Native to East tropical Africa.]

**Alstroemeria** – *Alstroemeria* species and hybrids. Also known as Peruvian lily. [Native to South America.]

**Argyranthemum** – *Argyranthemum frutescens* (L.) Sch. Bip. (*Chrysanthemum frutescens* L.). Also known as marguerite. [Native to Canary Islands.]

**Azalea** – Potted plants for indoor display are *Rhododendron* hybrids, especially of *R. indicum* (L.)

Sweet, *R. mucronatum* (Blume) G. Don, and *R. simsii* Planch. [Potted plant cultivars are derived from Asian species.]

**Begonia** – *Begonia* species and hybrids, particularly *B. semperflorens-cultorum* hort.<sup>2</sup> (which includes many of the cultivars known as fibrous-rooted begonia and wax begonia) and *B. tuberhybrida* Voss (which includes many cultivars known as tuberous begonias). [Native to tropical and subtropical regions, especially in the Americas.]

**Cedar** – *Thuja occidentalis* L. Eastern white cedar is extensively employed for hedges. [Native to North America.]

**Crabapple** – *Malus* species and hybrids, especially involving *M. baccata* (L.) Borkh. [Ornamental crabapples have been derived from both Eurasian and North American species.]

**Chrysanthemum** – *Chrysanthemum*. The florist's chrysanthemum widely used as a potted plant is *Chrysanthemum morifolium* Ramat. (*C. morifolium* (Ramat.) Hemsl., *Dendranthema grandiflorum* Kitam.). [The florist's chrysanthemum is known only in cultivation, but probably was selected in China from *C. indicum* L.]

**Cyclamen** – *Cyclamen persicum* Mill., the florist's cyclamen, is widely grown for sale in pots for indoor display. [The florist's cyclamen is native to Eurasia and North Africa.]

**Daffodil** – *Narcissus* species and hybrids. [The 50 or so species are native to Eurasia and North Africa.]

**Freesia** – The florist's freesia is made up of several complex hybrids involving *Freesia alba* (G.L. Mey.) Gumbel., *F. corymbosa* (Burm. f.) N.E. Br., *F. refracta* (Jacq.) Klatt, and *F. leichtlinii* Klatt. These were collectively labelled *F. hybrida* by L.H. Bailey. [All of these species are native to South Africa.]

**Geranium** – *Pelargonium* species, especially *P. hortorum* L.H. Bailey, known as fish geranium and zonal geranium. The common name “geranium” is easily confused with the genus name *Geranium*, of which many species are also cultivated. [Fish geranium is known only in cultivation. Most geranium species are native to South Africa, a few are from tropical Africa, Australia, and the Middle East.]

**Gerbera** – Cultivars marketed in pots are mostly *Gerbera hybrida* hort. (*G. jamesonii* Bolus ex Hook. f. *G. viridifolia* (DC.) Schz. Bip.). [*Gerbera* species are from Africa and Asia; those mentioned here are from Africa.]

**Hosta** – *Hosta* is a genus of about 40 species, most of which are grown, with over 1,000 cultivars recognized. [The species are native to Japan, China, and Korea.]

**Impatiens** – *Impatiens* is a huge genus of over 800 species, but few are cultivated. The principal cultivated species are *I. walleriana* Hook. f., *I. balsamina* L., and *I. hawkeri* W. Bull (“New Guinea impatiens”) [*Impatiens walleriana* is from Africa, *I. balsamina* is from India and Myanmar, and *I. hawkeri* is from Papua New Guinea and the Solomon Islands.]

**Iris** – There are about 200 species of *Iris*. Dozens of these and numerous hybrids are cultivated. So-called “Dutch Irises” are the primary cut-flower irises, and are hybrids of *I. xiphium* L. and other species, particularly *I. filifolia* Boiss. and *I. tingitana* Boiss. & Reut. [*Iris* species are native to the northern hemisphere. *Iris xiphium* and *I. filifolia* are native to Europe and North Africa, and *I. tingitana* is native to North Africa.]

**Kalanchoe** – *Kalanchoe* species. *Kalanchoe blosfeldiana* Poelln. (*K. globulifera* var. *coccinea* Perr.) is especially used as a potted plant. [Most of the over 100 species are native to Madagascar and tropical Africa; *K. blosfeldiana* is native to Madagascar.]

**Lilac** – *Syringa* species, especially *S. vulgaris* L. [Lilac species

<sup>2</sup>“hort.” (with a lower case h), based on the Latin *hortulanorum* (“of gardeners”), is the conventional unofficial way of designating a widely used name of horticultural origin, but not traceable to an author; this is often given as “Hort.”, which could lead to confusion with F.J.A. Hort or several other botanists (Horton, etc.)

are native to Eurasia.]

**Lily** – Unqualified, “lily” refers to *Lilium*, but numerous genera also have lily in their names. Dozen of species and hybrids of *Lilium* are cultivated. The very popular “Easter lily” is *L. longiflorum* Thunb. The “florist’s lily” is usually a hybrid with *L. longiflorum* as one of the parents. [The 100 or so species of *Lilium* are native to the temperate northern hemisphere. *Lilium longiflorum* is native to Japan, Korea, and Taiwan.]

**Lisianthus** – The florist’s “lisianthus” is not a species of the genus *Lisianthus*; it is usually *Eustoma exaltatum* (L.) Salisb. ex G. Don (*E. grandiflorum* (Raf.) Shinn., *E. russellianum* (Hook.) G. Don ex Sweet). [*Eustoma exaltatum* is native to the Americas.]

**Orchids** – Commercial orchids include species and hybrids of *Brassavola*, *Calanthe*, *Cattleya*, *Coelogyne*, *Cymbidium*, *Dendrobium*, *Epidendrum*, *Laelia*, *Lycaste*, *Miltonia*, *Odontoglossum*, *Oncidium*, *Paphiopedilum*, *Phalaenopsis*, and *Vanda*. The most popular potted orchid is *Phalaenopsis*. *Cattleya* (the corsage orchid) is also widely grown as a house plant. [Orchids are native to many areas of the world. *Phalaenopsis* is native to Asia and Australasia, and *Cattleya* to Central and South America.]

**Peony** – Herbaceous garden peonies are mostly derived from *Paeonia lactiflora* Pall., and the tree (shrubby) peonies from *P. suffruticosa* Andr. [Both species are native to Asia.]

**Petunia** – *Petunia hybrida* hort. ex E. Vilm. (a complex group of hybrids of garden origin; postulated parents include *P. axillaris* (Lam.) Britton et al. and *P. integrifolia* (Hook.) Schintz & Thell.) [All species of the genus *Petunia* are native to South America.]

**Poinsettia** – *Euphorbia pulcherrima* Willd. ex Klotzsch; [Poinsettia is native from Mexico to Guatemala.]

**Primula** – *Primula* species. *Primula malacoides* Franch. and *P. praenitans* Ker. Gawl. (*P. sinensis* Sabine ex Lindl., *P. chinensis* hort.) are especially grown in pots for indoor display. [*Primula malacoides* is native to China and Indo-China; *P. praenitans* is native to China.]

**Rose** – *Rosa* species and hybrids. The “florist’s rose” employed for cut flowers is a hybrid tea rose, i.e. a hybrid of certain *Rosa* species, selected for large, single-stemmed flowers. “Miniature roses” commonly grown in pots as houseplants are dwarf cultivars of several of the species grown as shrubs. [*Rosa* species are native to temperate and subtropical regions of the Northern Hemisphere.]

**Snapdragon** – *Antirrhinum* species, mostly the garden snapdragon, *A. majus* L. [*Antirrhinum majus* is native to North Africa and Eurasia.]

**Tulip** – Over 100 species of *Tulipa* have been recognized, but most are not cultivated or are grown as rock garden specimens. The widely grown tulips are complex hybrids; taller forms have been assigned in the past to *T. gesneriana* L., while some dwarf forms have been assigned to *T. suaveolens* Roth, two species which have been thought to be ancestors of modern tulips. Also, some tulips were bred as hybrids with other *Tulipa* species. The scientific name *T. gesneriana* is generally used for the majority of cultivated tulips. [*Tulipa gesneriana* is a native of Eurasia, *T. suaveolens* is native to southern Russia and the Middle East.]

## THE IMPRESSIVE SIZE OF THE ORNAMENTAL PLANT INDUSTRY OF CANADA

The ornamental horticulture sector represents a significant part of Canadian agriculture. Based on 2007 data (the last

comprehensive analysis), ornamental horticulture gross farm receipts totalled more than 2 billion dollars. About 65% of this was contributed by floriculture (including potted plants grown in greenhouses and (non-seed) propagating material sold for establishing outdoor plantings, whether established in greenhouses or outdoors); the remainder was contributed by plant nurseries (28%), the sod industry (6%), and the Christmas tree industry (3%).

The above data indicate the size of the ornamentals production industry at the wholesale or farm gate stage. However, the economic spinoff is much greater. Consumers spend over \$6 billion annually at the retail level on ornamental horticultural products, and about \$2 billion on landscaping services. The average Canadian household spends about \$700.00 annually on ornamental products and services. In addition, the Canadian economy benefits from manufacturing of horticultural equipment, as well as from trade and distribution of ornamentals and associated materials. Based on accepted economic multipliers, it has been estimated that the total economic contribution of the ornamental horticultural sector to Canada is about \$15 billion annually. The ornamental sector contributes to national tax income in a way unlike any other part of agricultural production: ornamental production is subject to GST/PST (or HST) taxes at point of production, i.e. at the first point of transfer in the value chain, as well as when consumers purchase the materials. When all taxes are considered, the ornamentals industry contributes close to a billion dollars in tax revenues annually. The ornamentals industry has been estimated to be responsible for about 6% of agricultural income generation in Canada. Ornamental plants collectively constitute Canada’s third largest crop after wheat and canola.

The ornamental horticulture industry of Canada employs the equivalent of close to 150,000 full time employees. Canada has over 3,000 commercial greenhouses, covering 20 million square metres, employing over 40,000 people. Floriculture represents 55% of this trade (the rest is dedicated to greenhouse vegetables). Canada also has over 1,000 sod and nursery producers, employing about 15,000. There are also about 3,000 Christmas tree farms. Slightly more than half of nursery and floriculture production occurs in Ontario, about 25% in British Columbia, and about 13% in Quebec. There are over 9,000 retail outlets (including florists) in Canada that sell ornamental products.

## STATISTICAL ANALYSIS OF CANADIAN ORNAMENTAL PLANT PRODUCTION

The most current report of ornamental plant production in Canada is Statistics Canada (2011), which provides detailed information for 2009 and 2010. These data are summarized in the following.

In 2010, Canadian greenhouses produced 238 million potted ornamental plants (worth about \$700 million), 310 million cut flowers (\$133 million), 454 million ornamental bedding plants (\$181 million), and 101 million cuttings (\$63 million). Canadian nurseries additionally produced a variety of materials for ornamental planting (including both herbaceous and woody species) worth about \$500 million (including fruit shrubs). More precise data are given in Table 1.

(Continued)

**Table 1. Comparative Values of Sectors of the Canadian Ornamental Plant Industry** (based on Statistics Canada 2011; data for sod and Christmas tree production are reported separately in the discussions of these industries, below; the categories are mutually exclusive)

**A. Greenhouse Sales** (excluding vegetables and tree seedlings)

Category	2009 \$ wholesale	2010 \$ wholesale
Potted plants	670,128,340	701,340,625
Cuttings (for vegetative propagation)	64,631,528	62,992,480
Cut flowers	132,592,120	132,641,255
Bedding plants	175,255,085	180,722,750

**B. Outdoor-Grown Plant Sales** (includes shrubs & trees grown for fruit)

	481,897,010	510,992,660
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Total annual dollar values for production of individual plant species do not seem to be available for Canada (as noted below, they are for the United States). Instead, numbers of plants, or pots, or (numbers of cut flowers) are reported in Canada, and these statistics indicate comparative importance of at least the more important species. This information is indicated in Tables 2, 3, and 4, and information on categories of plants produced in nurseries is summarized in Table 5 (in all cases, empty cells indicate data were collected but were "too unreliable to be published").

**Table 2. Numbers of Indoor Potted Plants Produced in Canada<sup>3</sup>**

Species or category	2009	2010
African violet		
Azalea		
Chrysanthemum	6,942,835	9,783,100
Cyclamen	2,145,555	1,803,125
Gerbera	3,469,270	2,789,950
Kalanchoe	4,783,525	5,792,150
Lily	3,362,675	4,716,425
Orchids	6,252,305	
Poinsettia	7,685,425	7,294,250
Primula	1,005,803	1,220,945
Rose (miniature)		
Tulip	1,996,270	
Indoor hanging plants	786,450	895,280
Other indoor plants	38,808,595	26,045,840
Tropical foliage and green plants	9,850,600	8,503,975

<sup>3</sup>As noted above, over 200 million potted plants are grown in greenhouses annually, so that the above table only reports data for most of the leading species, representing about a third of total production.



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Plate 3. Principal indoor potted plants (“houseplants”) produced in Canada. Fig. 13. African violet, photo by Wildeuer, online at Wikipedia [authorized for use under the GNU Free Documentation License]. Fig. 14. *Chrysanthemum morifolium*. Photo by M. Ikeda, online at Wikimedia. Fig. 15. *Cymbidium* orchid. Photo by Marlith, online at Wikimedia. Fig. 16. Poinsettia. Photo by P. Kratchovil, publicdomainpictures.net. Fig. 17. Primrose. Photo by Y. Ray, publicdomainpictures.net. Fig. 18. Easter lily (*Lilium longiflorum*). Photo by M.H. Wade, online at Wikipedia [authorized for use under Creative Commons Attribution-Share Alike License].



Plate 4. More principal indoor potted plants (“houseplants”) produced in Canada. Fig. 19. Florist’s azalea. Photo by E. Small & B. Brookes. Fig. 20. Miniature rose. Photo by E. Small & B. Brookes. Fig. 21. Tulips. Photo by V. Kratchovil publicdomainpictures.net. Fig. 22. Gerbera. Photo by 4028mdk09, online at Wikimedia [authorized for use under Creative Commons Attribution-Share Alike License]. Fig. 23. Florist’s cyclamen (*C. persicum*). Photo by Fanghon, online at Wikipedia [authorized for use under the GNU Free Documentation License]. Fig. 24. Kalanchoe (*K. blossfeldiana* ‘Flaming Katy’). Photo by F. & K. Starr, starrimages@hear.org [authorized for use under Creative Commons Attribution-Share Alike License].



Plate 5. Top florist's cut flowers. Fig. 25, Chrysanthemum. Photo by L. Jacobs, publicdomainpictures.net. Fig. 26. Gerbera. Photo by Ziko, online at Wikimedia [licensed for use under the GNU Free Documentation License], Fig. 27. Bouquet of tulips. Photo by V. Kratchovil, publicdomainpictures.net. Fig. 28. Bouquets of roses. Photo by V. Kratchovil, publicdomainpictures.net. Fig. 29. *Alstroemeria aurantiaca* D. Don. Photo by J.J. Harrison, online at Wikipedia [licensed for use under the GNU Free Documentation License]. Fig. 30. Lisianthus (*Eustoma exaltatum*). Source: Curtis's Botanical Magazine, Vol. 65, Plate 3626 (1838).



Plate 6. More top florist's cut flowers. Fig. 31. Lily (note the tiny white flowers of gypsophila at right). Photo by S. Apted, publicdomainpictures.net. Fig. 32. Daffodil. Photo by Glenn Franco Harris [commercial use prohibited]. Fig. 33. Freesia. Photo by Glenn Franco Harris [commercial use prohibited]. Fig. 34. Snapdragon. Photo by Plane 777, online at Wikipedia. Fig. 35. Iris. Photo by Penubag, online at Wikipedia.

**Table 3. Numbers of Greenhouse-grown cut flowers Produced in Canada<sup>4</sup>**

Species or category	2009 (number of stems)	2010 (number of stems)
Alstroemeria	19,503,535	15,616,710
Chrysanthemum	20,107,860	27,531,280
Daffodil	12,826,820	
Freesia		
Gerbera	60,938,940	69,028,645
Iris		
Lily	16,049,375	19,777,870
Lisianthus		
Rose	11,482,530	12,046,655
Snapdragon	16,480,635	
Tulip	91,685,255	96,670,305
Other cut flowers	25,109,950	22,735,605

<sup>4</sup>As noted above, about 300 million cut flowers are grown in greenhouses annually, so that the above table only reports data for some of the leading species.



Plate 7. Principal outdoor potted (bedding) plants produced in Canada. Fig. 36. Geranium. Photo by R. Focker, online at Wikipedia. Fig. 37. Petunia. Photo by R. Paprstein, online at Wikipedia. Fig. 38. Argyanthemum. Photo by Stickpen, online at Wikipedia. Fig. 39. Chrysanthemum. Photo by D. Wagner, [publicdomainpictures.net](http://publicdomainpictures.net). Fig. 40. Hosta. Photo by P. Henjum, online at Wikimedia. Fig. 41. Patience (Impatiens). Photo by Glenn Franco Harris [commercial use prohibited].



Plate 8. More popular outdoor potted (bedding) plants produced in Canada. Fig. 42. Tulips. Photo by Marmstrong21, online at Wikipedia. Fig. 43. peony (*P. lactiflora*). Photo by V.M. Vicente Selvas, online at Wikipedia. Fig. 44. Wax (fibrous-rooted) begonia. Photo by A. Schmidt, publicdomainpictures.net. Fig. 45. Peony (*Paeonia suffruticosa*). Photo by Charvex, online at Wikipedia. Figs. 46 & 47. Tuberous begonia. Photos by E. Small.

**Table 4. Numbers of Outdoor Potted Plants Produced in Canada**

Species or category	2009 (number of pots)	2010 (number of pots)
Argyranthemum	474,665	607,585
Begonia	5,102,385	6,357,740
Chrysanthemum	3,989,860	4,420,390
Geranium	18,948,495	19,492,085
Hosta		
Impatiens	8,119,585	8,878,845
Petunia	8,823,430	
Herbaceous perennials	8,836,485	14,847,445
Outdoor hanging pots	10,369,810	11,758,515
Other outdoor pots	57,574,195	57,226,310

**Table 5. Numbers of Outdoor-grown Plants Produced in Canadian Nurseries** (excluding tree seedlings produced for reforestation and fruit bushes and trees).

Category	2009		2010	
	Field-grown	Container-grown	Field-grown	Container-grown
Coniferous trees	4,567,970	10,073,620	2,827,810	2,382,190
Shade or ornamental trees	1,000,000	1,349,260		
Coniferous evergreen shrubs	1,045,210	3,937,330	1,184,965	4,248,225
Evergreen broadleaf shrubs	543,685	3,568,815	235,000	3,188,240
Deciduous shrubs including roses	2,756,650	8,360,025	1,960,175	9,422,275
Vines	1,741,850	750,155		687,605
Perennials & annuals		14,599,100	2,860,355	12,738,040
Other trees & plants	603,015	634,000		

The above tables highlight the species grown in greenhouses for sale as potted plants and cut flowers, and also the herbaceous species that are most important as bedding plants, but do not identify the particular woody species grown outdoors as shrubs and trees, except to indicate that roses are the predominant category of woody plant sold. Other outdoor plants in Canada that deserve mention include cedar (*Thuja occidentalis*, the principal hedge plant of Canada), lilac (*Syringa* species, especially *S. vulgaris*), crabapples (*Malus* species and hybrids), and peony (*Paeonia suffruticosa* and *P. lactiflora*).



Fig. 12. A commercial greenhouse dedicated to production of flowering potted plants. Photo by J. Locke, online at Wikipedia.



Plate 9. Roses, the top-selling outdoor woody plants in Canada. Fig. 48. *Rosa* 'Dream Carpet'. Photo by B. Brookes. Fig. 49. *Rosa* 'David Austin'. Photo by B. Brookes. Fig. 50. Rose bush. Photo by D. Wagner, [publicdomainpictures.net](http://publicdomainpictures.net). Fig. 51. Climbing rose. Photo by P. Greb, Bugwood Image Database.



Plate 10. Top-selling flowering trees grown for floral display in Canada. Fig. 52. Crabapple. Photo by J. LaForest, Bugwood Image Database. Fig. 53. Lilac. Photo by D. Bianco, online at Wikipedia

## INTERNATIONAL TRADE IN ORNAMENTALS

**Table 6. Top Ten Ornamental Plants in International Trade<sup>5</sup>**

Alstroemeria	Gerbera
Carnation	Gypsophila
Chrysanthemum	Lily
Cymbidium	Rose
Freesia	Tulip

<sup>5</sup> As recognized recently by the Dutch floral industry. While most of these plants have long-term popularity, trade statistics are variable from year to year, and some plants are much more popular in some countries than in others. Other plants that are very important internationally include gladiolus, orchids (other than cymbidium), anthurium, and aster. For a somewhat different list, see “the top 20 commercial cut flowers of the world” (which includes four *Lilium* species), in Maree and van Wyk (2010), who point out “It is impossible to be completely accurate about the best-selling flowers. These are constantly changing because production can be affected by adverse or favourable weather conditions...and because market forces control which products are imported from where and in what quantities.”

The ten top-selling ornamental plants in international trade (Table 6) are all also top sellers in Canada, except for gypsophila. (Dozens of species of *Gypsophila* are cultivated in rock gardens and borders, and for bouquets; however, the florist's gypsophila (baby's breath) of commerce is usually *G. elegans* Bieb. or *G. paniculata* L., both native to Eurasia.) This impressive widespread popularity of a small number of plant species reflects two facts: (1) To be successful commercially, ornamental plants must be both attractive to consumers and have features that facilitate their efficient growth by producers and sale by retailers; plants that meet these criteria are likely to be successful everywhere, provided that marketplace features are comparable. (2) In fact, markets for many products have become very similar among countries purchasing ornamental plants. Most international trade is to well-off First-World consumers who live in an amazingly homogenous marketplace with the same products offered almost everywhere (for example, note the near-universal presence of the major fast-food chains).

Greenhouse cultivation of ornamentals in Canada during the winter is very challenging, especially in view of increasing costs for energy. Unfortunately, many ornamental plants are not well suited to grow in the low light levels of the Canadian winter, even with the use of high pressure sodium light supplementation. Until fairly recently, export trade in ornamental plants was mainly from Developed Nations, particularly including Europe, Japan, and North America. In recent decades, much of the trade has shifted to Third World areas with climates with very long growing seasons and cheap labour costs, notably Ecuador, Ethiopia, Kenya, Columbia, and India, and to a lesser extent South Africa, and Malaysia. Israel also accounts for a large proportion of the floral trade. China is expected to become a major player (it is one of the world's largest producers of flowers, but currently exports very little). Columbia is the major exporter of cut flowers to North America. The U.S. is the main exporter of ornamentals to Canada, especially from California, Washington, Florida, Hawaii, Oregon, and New Jersey. Canada also receives plants from Columbia, Mexico, Ecuador, Costa Rica, the Netherlands, Italy, Belgium, Denmark, Germany, and Spain.

There is concern about the extensive use of pesticides in many Third World nations now producing ornamental plants for international trade. This is not only an issue of human

health and environmental health, but also represents unfair competition. Integrated Pest Management principles, including the use of biological control agents, are now widely established in the ornamental plant industry in Canada, partly because of more stringent regulations regarding pesticides, partly due to increasing pesticide resistance in some pests, and partly due to regulations regarding exports to the U.S. While biological control is desirable, this necessitates additional expenses for Canadian producers.

The wealthy once maintained “cutting gardens” of plants that were intended to provide regular displays of cut flowers for the interiors of mansions. Today, stunningly attractive cut flowers are available from most supermarkets as well as florists and other outlets, and are in considerable demand. The most important sector of the international ornamental plant trade is cut flowers, because they are lighter than potted plants and so transportation costs are comparatively low. Cut flowers account for about 50% of worldwide trade in floriculture products, and cut foliage an additional 10%. Characteristics that make for good cut flower species include: ease of cultivation and handling; color (white and pink are popular for spring weddings, orange and copper are sometimes popular in the fall); fragrance; and stem length (long stems are often preferred). The cut flower industry is world-wide, and competition among nations is critical to determining the success of the domestic industry in Canada. Cut flowers are harvested both from outdoor and greenhouse-grown plants. In Canada, the cost of maintaining greenhouses in the cold part of the year is a considerable disadvantage. On the other hand, local production is advantageous where flowers do not ship well.

European consumers buy cut flowers and flowering potted plants almost weekly, and annually spend ten times more per person on such purchases than North Americans. However, there is very limited export of ornamentals from Canada to Europe. Almost all exports (worth about \$300 million annually) are to the United States, somewhat more than half originating from Ontario, with about a quarter from British Columbia. Imported ornamentals amount to about \$400 million annually, about half from the United States, much of the remainder from the Netherlands and Columbia. Table 7 provides details of Canadian international floricultural trade for 2009 and 2010.

**Table 7. Canadian Floriculture Imports and Exports**  
(Value in \$millions; data from Agriculture Canada 2011)

Commodity	2009	2010		
	Exports	Imports	Exports	Imports
Bulbs, tubers, tuberous roots	13	50	15	52
Other live plants, including roots, cuttings, and slips	210	184	203	171
Cut flowers for bouquets or ornamental purposes	25	128	37	123
Foliage, branches, and other parts of plants <sup>3</sup>	674	24	658	20
Totals	922	385	913	366

<sup>3</sup> Unlike the other groupings of plant materials which represent cultivated plants, in Canada this category refers mainly to wildcrafted materials, particularly from forests (In the U.S., considerable “greenery” is grown). This is part of the “greens industry”, including for example evergreen branches for use in floral arrangements, basketry, and wreaths.

Part 3 of this overview will appear in the next issue of the Bulletin( 45(1) which will be published in the Spring of 2012. A complete reference list will also be included.



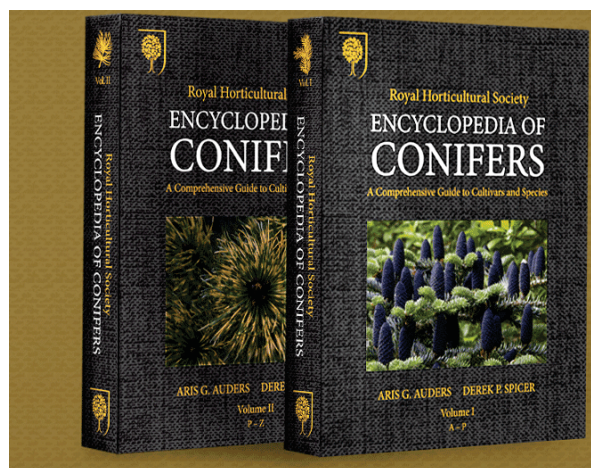
## ***New Conifer Publication Announced!***

A comprehensive guide to cultivars and species by Aris G. Auders and Derek P. Spicer.

Publication date: early 2012

[www.coniferworld.com](http://www.coniferworld.com)<<http://www.coniferworld.com/>>

This two-volume, lavishly and extensively illustrated encyclopedia is a much needed, complete reference book covering all recognised conifer cultivars and species, both hardy and tropical. The 1,200-page work features names, synonyms, and brief descriptions, as well as information about height and spread after 10 years, where known, for over 8,000 cultivars and all 615 conifer species, plus their subspecies and varieties. Apart from the descriptive text, it is illustrated with more than 5,000 photographs, which have been taken especially for this encyclopedia.



The species and their descriptions follow the most recent botanical classification (Farjon, 2010) and the cultivar information has been compiled with reference to the RHS International Conifer Register and Checklist, including as yet unpublished data. There is unique appendix listing all the principle conifer collectors, nurseries, arboreta and individuals responsible for introducing new cultivars over the last three centuries. The book is designed to meet the needs of professional as well as amateur gardeners.

Aris G. Auders, a conifer collector and photographer from Latvia, and Derek P. Spicer, chairman of the British Conifer Society, have been working on this book for 7 years. The authors have been assisted by Lawrie Springate, RHS International Conifer Cultivar Registrar (2004–2009) and Victoria Matthews, RHS International Registrar.

Author and broadcaster Roy Lancaster states in the Foreword: The authors are committed and knowledgeable conifer enthusiasts who have been supported by a wealth of international expertise and experience. The book is claimed to be the most comprehensive account of its kind. Its authors and their helpers have delivered a truly monumental account of a major group of woody plants.

You can find more information, as well as see samples of the encyclopedia at [www.coniferworld.com](http://www.coniferworld.com)<<http://www.coniferworld.com/>>.