

INDEX

A

Adora

- picture, santini 29

Africa

- area, trade flows 81 - 93
- Ethiopia
 - area 84
- fall of euro vi
- import by 28-EU
 - carnations 93
 - chrysanthemum 90, 93
 - cut flowers 93
 - roses 92, 93
 - shares Africa & America 93
- Kenya
 - area, trade flows 85 - 88
- light sums xii, xxii, 81, 84
- South Africa
 - area, trade flows 89
- Tanzania
 - area, trade flows 90
- Uganda
 - area, trade flows 91 - 92
 - light sums 91
- vegetation map 83
- Zimbabwe
 - area, trade flows 92

Agriom, Dutch breeder 91

AIPH v

air transport 8, 16, 21, 40, 41, 42, 79

- costs/kg xiii

Aleksandrov

- picture, disbud 28

Allwhite

- santini 39

America, Central 70 - 71

- Costa Rica
 - area, trade flows 70
 - light sums 70, 71
- Guatemala
 - area, trade flows 70
 - light sums 71
- Nicaragua
 - area, trade flows 70
 - light sums 71

America, North 65 - 68

- Canada
 - area, trade flows 67 - 68
- Mexico
 - area, trade flows 68 - 69
 - light sums 69
- USA
 - area, trade flows 65 - 67
 - light sums 65, 66

America, South 72 - 80

- Brazil
 - area, trade flows 80
 - light sums 80
- Colombia
 - area, trade flows 72 - 76
 - light sums 72
- Ecuador
 - area, trade flows 76 - 79
 - light sums 79
- general overview 71
- light sums 71
- Anastasia xviii, xxviii, 39**
 - picture, disbud 28
- Anastasia Dark Green xviii, xxviii, 39**
 - picture, disbud 28
- Anastasia Sunny xviii, xxviii, 39**
 - picture, disbud 28
- anemone bloom form 156, 163**
 - definition NCS-USA 174, 176
 - picture 175
- Anhui, China**
 - centre of origin chrysanthemum 95
- Anthemis grandiflora 133**
- Antonov**
 - disbud 39
- Arab states 81 - 83**
 - Dubai Flower Centre 82
 - Egypt
 - area, trade flows 83
 - light sums 81
 - Morocco
 - area, trade flows 83
 - Saudi Arabia
 - area, trade flows 81
 - United Arab Emirates
 - area, trade flows 82
- areas, production flowers**
 - world 4
- Argentina**
 - light sums 71
- Armada, Dutch breeder 91**
- Artemisia**
 - acupuncture, moxa 101
 - picture as rootstock 171
- Artemisia & Chrysanthemum indicum L. 100**
 - repellent & fumigant 104
- Artemisia essential oil**
 - possible effects on vase life 180
- Artemisia L**
 - thujone, camphor, borneol, 1,8-cineole 104
- Artemisia vulgaris L.**
 - essential oil, camphor 104
 - mug wort, Flaienkraut 104
- Asia**
 - global chrysanthemum market
 - Malaysia, main supplier v
- Asia, South & East 56 - 64**
 - Australia, New Zealand
 - area, trade flows 57
 - light sums 57
- China
 - area, trade flows 58 - 59
 - daily temperatures 59
 - light sums 56
- Chinese Taipeh, Taiwan
 - area, trade flows 60
 - light sums 56
- India
 - area, trade flows 60
 - light sums 60
- Japan
 - area, trade flows 61 - 62
 - light sums 61
- Korea, Rep.area, trade flows 63
- light sums 56
- Malaysia
 - area, trade flows 63
 - light sums 56
- New Zealand
 - area, trade flows 57
 - light sums 57
- Thailand
 - area, trade flows 64
 - light sums 56, 64
- Viet Nam
 - area, trade flows 64
 - light sums 56

Asia, Western

- Israel
 - area, trade flows 54
 - light sums 54
- Turkey
 - area, trade flows 55

Atsu-bashiri, O-giku 157

Atsu-mono, O-giku 157

Aurinko

- picture, santini 29

Australia

- area, trade flows 57
- import chrysanthemum 57
- light sums xii, 57

Austria

- cut flower consumption/capita xiv, xxiv
- flower cons./capita xiv, xxiv, 7
- import chrysanthemum 47

Aviso xviii, xxviii

- picture, santini 29

AYR cultivars chrysanthemum

- disbuds 28
- santini 29
- sprays 27

B

Bacardi xviii, xxviii, 38

- picture, spray 27

Bahrain

- light sums 81

- Ball Horticultural Company**
 – promotor of AYR growing 142
- Baltica** xviii, xxviii, 38
 – picture, disbud 28
 – picture spray 27
- Baltica Yellow** xviii, xxviii, 38
- Baltic States**
 – area, trade flows 47
 – import chrysanthemum 47
- Barca Red**
 – picture, disbud 28
- Belarus**
 – area, trade flows 48
 – import chrysanthemum 48
- Belgium**
 – area, trade flows 17
 – cut flower consumption/capita xiv, xxiv
 – flower consumption/capita xiv, xxiv, 7
 – import chrysanthemum 17
 – Liège Airport
 hub Ethiopian cut flowers 17
 – light sums 17
 – pot plant consumption/capita xiv, xxiv
- Běncao Jing Ji Zhu** 103, 105
- Bernard, Frech breeder** 18
- Binnendijk, D.J., FlexPlan** 152
- Blancard, Pierre-Louis** 2, 132
- Bolivia**
 – light sums xii, xxii, 71
- bonsai**
 – bonsai-zukuri Japan 170
 – China, Japan 105
 – ko-giku 164
 – NCS classification 174
 – penjing, potted plant 105
 – picture 170
 – plant form 177
 – using small-sized types 170
- Boris Becker**
 – disbud 39
- borneol, medicine, incense** 104
- Bouncer** xviii, xxviii
 – picture, santini 29
 – santini 39
- Brandkamp GmbH, German breeder** 19, 146
- Brazil**
 – area, trade flows 80
 – GNI 7
 – Holambra & other markets 80
 – light sums 71
- breeding**
 – China 500-1900 AD 116
 discovery: seedlings give new colours 115
 – Chinese influence in the West 132 - 134, 135, 136, 140
 charms / multifloras 177
- Europe
 19th century 136
 20th century 140 - 148
- grafting, source of novelties in China 115
- Great Britain 140
- interspecific crossings
 semi-double to double forms 100
- Japanese influence in the West 137, 139, 140, 141, 156
 American sprays, since 1920s 142
 Mrs. R.C. Pulling 139
 Reagan 61, 138
 Spider-types 156
- Japan, Korea 500-1900 AD 117 - 123
- Netherlands 143 - 148
- number of cultivars from 1000 AD in China 115
- outdoor cultivars Netherlands 143
- USA, Australia & New Zealand 141, 142
 White Spider CFPC 2275 142
- Breyne, Jacob** 2, 126 - 131
 – bad climate for mum growing 131
- Breyne, Johann Philipp, famous son 130
- Breynius, Jacobus 126, 129
- first author chrysanthemum 126
- Gakiku, 1691
 Japanese cultivars 123
- Hanseatic League, map 127
- Jacob Layn invented name 128, 129
- life 126
- Matricaria Japonica, chrysanthemum 126, 130, 131
- Prodromus II with record of mum 126, 128
- Willem ten Rhyne, Deshima 128, 130
- brush & thistle bloom form**
 – definition NCS-USA 174, 176
- Buddhism**
 – garden design 107
 – life of Siddhartha 113
 – spreading Asia 2, 112 - 113
 – spreading into Korea, Japan 117
 – spreading of chrysanthemum 112 - 113
 – ups and downs in Táng Period, 7th-8th century 113
- Zen Buddhism Japan 120, 123
- Bulgaria**
 – import chrysanthemum 47
- C**
- Cameron Highlands**
 – Malaysia 63
- camphor, effects** 104
- Canada**
 – area, trade flows 67 - 68
 – import chrysanthemum 68
 weight xvi, xxvi
 – most popular cut flowers & pot plants 68
- carnation**
 – share in cut flower trade world xiv, xxv, 11
 – top exporters xv, xxv, 72
 – top importers
 world 16, 21, 33, 52, 65, 93
- trade flows Europe 15
- trade flows world 11
- cascade**
 – in NCS-UK classification 174
 – plant form 137, 169, 174, 177
- CBS (StatLine)** v, 3, 4, 6, 8, 10, 11, 30, 31, 40
- Dutch export chrysanthemum value & stems xvi, xxvi
- higher data than Eurostat vi
- higher figures than Eurostat vi
- Celebrate** xviii, xxviii, 38
 – picture, spray 27
- Cels, Jacques-Philippe-Martin**
 – amateur botanist 133
- Central America**
 – light sums xii, xxii
- Challet-Herault** 18
- charms**
 – Chrysanthemum indicum 177
 – Chrysanthemum weyrichii (Maxim.) Miyabe & T. Miyake 116
 – McGregor 1930 177
 – plant form 137, 177
 – Sutton's Charm 177
 – winter-hardiness 177
- Chevalier, Auguste**
 – taxonomist 133
- Chile**
 – light sums 71
- China, area & trade flows**
 – area, trade flows 58 - 59
 – average daily temperatures 59
 – chrysanthemum
 domestic market & export xi
 – exporter carnations 59
 ranking xv, xxv
 – exporter chrysanthemum 58

- ranking xv, xxv
 - trade value \$/kg xviii, xxviii
- exporter cut flowers 59
- flower markets 58, 59
- GNI 7
- Kunming xii, xxii, 25, 56, 58
- light sums xii, xxii, 56
- production area chrysanthemum xi, xxi, 58
- production & trade 4
- Wuhan 58
- China, history chrysanthemum**
 - herb gatherers 101
 - history, origin & spreading 97 - 116
 - Blancard, 1789, introduction mum into Europe 116
 - map spreading Buddhism 112
 - map world 114
 - Robert Fortune, 1843-1861 116
 - seclusion, violent opening market 115, 116
 - The Century of Humiliation, 19th century 115
- Chinese Gardening**
 - floriculture, one of the seven arts 106
 - in harmony with Yin & Yang 107, 108
 - position chrysanthemum 105, 106
 - potted plants, penjing 105
 - Suchow, the "Garden City" 106
 - symbolism 106
- Chinese literati, scholar-artist**
 - chrysanthemum, chief of the literati 97
 - chrysanthemum symbol of Confucian scholar 97
 - Kao Lien, treaty on chrysanthemum, 1591 115
 - Táo Yuānmíng 97
- Chinese Medicine, Traditional (TCM) 97, 102, 103, 104, 155**
 - C. indicum 97
 - Flos Chrysanthemum Indici 102
 - Flos Chrysanthemum Morifolii 102
- Chinese Minimum**
 - small-flowered garden mum 135
- Chinese old mum literature**
 - Chrysanthemum manual 1104 115
 - Cyclopedia of Flowers 1621, Wang Xian-jin 115
 - Liu Hao in 1708 115
 - Manual of Hundred Chrysanthemums of 1242, Shi Ju 115
 - Thu Cheng-Khuei in 1630 115
 - Tsun Sheng Pa Chien, 1591 115
- Chinese script**
 - chrysanthemum in Chinese 99
 - Hanja 99
 - Kangxi dictionary & Unicode 99
 - Pinyin, romanization of Chinese 99
- Chinese Taipei (Taiwan)**
 - area, trade flows 60
 - export chrysanthemum 60
 - light sums 56
 - production area 4
- Chōji-giku, medium-sized**
 - anemone type 163
- Christi**
 - santini 39
- chromosomes chrysanthemum 156**
 - aneuploidy 95
 - English and Japanese cultivars 156
 - Florist's chrysanthemum Chrysanthemum × morifolium Ramat. 54 (2n = 6x) xi, xxi, 1, 95, 96
 - gene CmCCD4a degrading synthesized carotenoids 100
 - genus Chrysanthemum 95
 - parents
 - Chrysanthemum indicum L. (2n = 18, 36, 54) 95, 96
 - Chrysanthemum japonense Nakai 96
 - Chrysanthemum lavandulifolium (Fisch. ex Trautv.) Makino (2n=18, 36) 95, 96
 - Chrysanthemum pacificum Nakai (2n=90) 96
 - Chrysanthemum vestitum (Hemsl.) Stapf. (2n=54) 95
 - polyploidy 95
- Chrysal**
 - vase life 180
- chrysanthemum**
 - All Saints' Day 3, 26
 - All Souls' Day 3, 26
 - ceremonial 2, 3
 - China
 - area, trade flows xi, xxi, 58 - 59
 - history, origin & spreading 95-116
 - classification bloom forms 174 - 177, pictures 175
 - classification growing methods 173
 - classification plant forms 177
 - classification response groups 177
 - classification winter-hardiness 178
 - Colombia
 - area, trade flows 4, 72 - 76
 - dominating markets USA & Canada xv, xxv
 - exporter (2) in value, in weight (3) xv, xxv
 - peso vs. dollar, pound xiv, xxiv, 5
 - dormancy of stock plants 151
 - exporters (top) xv, xxv
 - trade value \$/kg xviii, xxviii
 - France
 - import 18
 - production area xi, xxi
 - gene centres 95
 - Germany
 - import 19
 - production area xi, xxi, 19
 - Great Britain
 - import 20
 - production area xi, xxi, 22
 - history, origin & spreading 95, 152
 - importers (top) world
 - value & weight xvi, xxvi
 - imports/capita Europe xiv, xxiv
 - International Code of Botanical Nomenclature (ICBN) Chrysanthemum × morifolium Ramat. xi, xxi, 96, 133
 - International Code of Nomenclature of Cultivated Plants (ICNCP) Chrysanthemum Indicum Group xi, xxi, 96, 133
 - Italy
 - import / export 23
 - production area xi, xxi, 23
 - Japan
 - Import 62
 - production area xi, xxi
 - Malaysia
 - export 63
 - exporter (3) in trade value & (2) in weight xv, xxv
 - medicinal, food, drink 155
 - Mexico
 - export 69
 - production area xi, xxi, 68
 - Netherlands 30
 - consumption/capita xiv, xxiv, 43
 - domestic consumption xviii, xxviii, 43
 - exporter (1) in trade value &

- weight xv, xxv
 - export main clients, 2007-2013 xvii
 - export map & table 32
 - holdings, areas 37
 - production area xi, xxi
 - ruble effect on export xiv, xxiv, 6
 - trade value €/kg xvii, xxvii, xxviii
 - new cultivars China 2, 115
 - nomenclature
 - Dendranthema 96
 - Poland
 - import & export 49
 - production area xi, xxi, 48
 - production areas world 4
 - production techniques 149 - 152
 - England, year-round innovation xi, xxi
 - Germany, year-round innovation xi, xxi
 - Jim Mikkelsen, first year-round grower xi, xxi, 149
 - Netherlands, year-round innovation xi, xxi
 - USA, year-round innovation xi, xxi, 149
 - productivity Netherlands xii, xxii, 38
 - rosettes 124, 125
 - Imperial Seal Japan 122
 - share in cut flower exports world xv, xxv, 11
 - share in cut flower imports
 - Great Britain xiv, xxiv
 - USA xiv, xxiv
 - world xiv, xv, xxiv, xxv, 11
 - share in world export of the Netherlands 30
 - stems xvi, xxvi
 - trade value xv, xxv
 - weight xv, xxv
 - sorrow 3, 18, 23, 108, 121
 - spreading
 - centre of origin 95
 - from China to Asian countries 112
 - to world, map 114
 - top exporters world xv, xxv, 11, 30, 63, 72
 - top importers world 10, 20, 50, 62, 65
 - trade flows
 - Europe 16, 32
 - world 10
 - world map 12
 - USA
 - import & export 65
 - production area xi, xxi, 66
 - world export
 - stems xv, xvi, xxvi
 - value xv, xxv
 - weight xv, xxv
- Chrysanthemum**
- drink 97, 101, 102, 107, 108, 109, 110, 155
 - immortality 97, 101, 108, 109, 110, 111, 122
 - medicinal plant 101, 102
 - ornamental 101, 102
 - repellent 102, 103
 - vegetable 101, 102
 - Ryōri-giku 155
 - Shun-giku 155
- Chrysanthemum boreale (Makino)**
- Makino 100**
 - camphor 104
 - medicinal wine, yào jiu huā 102
- Chrysanthemum cinerariifolium (Trevir.) Vis.**
- pyrethrins 104
- Chrysanthemum, first purples**
- C. chanetii H. Lév., 2n=36) 100
 - C. zawadskii Herbich (2n=54) 101
- Chrysanthemum, flower of the ninth month**
- C. vestitum var. latifolium J. Zhou et J.Y Chen 100
 - Jiuhua' Jú 100
- Chrysanthemum indicum L. 177**
- borneol, camphor, 1,8-cineole 104
 - botanical characteristics 98
 - in Chinese yě jú 97
 - main ancestor 96, 97
 - medicinal plant 108
 - medicinal use in TCM 97, 102
 - medicinal wine, yào jiu huā 102
 - qualitative Short Day plant 98
 - repellent, pesticidal effects 103, 104, 105
- Chrysanthemum japonicum Makino**
- borneol in medicine, incense 104
- Chrysanthemum lavandulifolium (Fisch. ex Trautv.) Makino**
- ancestor, late flowering 98, 102
 - medicinal wine, yào jiu huā 102
- Chrysanthemum × morifolium Ramat. 97**
- camphor, cineole, borneol 104
 - habitat 97
 - in Chinese jú hua 97
 - medicinal 102
 - Nine-Flowered Mum semi-double, white flowered 110
- tea 102, 108, 155
- Chrysanthemum nankingense Hand.-Mazz.**
- ancestor, late flowering 98, 101, 102
 - used for heat tolerance 116
 - vegetable 101
- Chrysanthemum vestitum (Hemsl.) Stapf**
- ancestor, late flowering 98
- Chrysanthemum weyrichii (Maxim.) Miyabe & T. Miyake**
- used for cushion habit 116
- Chrysanthemum, yellow species**
- C. boreale (Makino) Makino 100
 - C. dichrum H. Oashi & Yonek 100
 - C. indicum L. 100
 - C. lavandulifolium (Fisch. ex Trautv.) Makino 100
 - C. nankingense Handel-Mazzatti 100
- Chrysanthemum zawadskii Herbich (2n=54)**
- ancestor, late flowering 98
 - used for hardiness 116, 117
- Chusan, Chinese island 2, 135**
- Chusan daisy 136**
- small-flowered garden mum 135
- cineole effects 104**
- classification bloom forms & sizes**
- Netherlands 176
 - USA 175
 - USA / UK 174
- classifications types & uses**
- Japanese Exhibition types 155, 170
 - Prof. Niwa 155
- Cleangro, English breeder 141**
- closed-cold-chain 41**
- CO₂ emission/kg product 41, 66**
- Cockshull, Dr. Kenneth E.**
- GCRI Littlehampton 22
- Colombia**
- area, trade flows 72 - 75
 - cut flower export USA weight & value xiv, xxiv
 - Esmeralda Farms 74
 - flower farms 74
 - FTA USA 75
 - GNI 7
 - light sums xi, xxi, 71, 72, 79
 - production & trade 4
 - sea transport, harbours 72
 - top exporter carnations 74

- ranking xv, xxv
 - chrysanthemum 75
- ranking xv, xxv
 - cut flowers 72
- ranking world xv, xxv
 - ornamentals 72
 - roses 74
- UPOV treaty 72
- Confucianism** 2, 108, 110, 111, 112, 117, 121
 - garden design 106, 107
- Confucius**
 - life & works 110, 111
 - state ideology Han 111
- container transport (sea transport)**
 - 8, 13, 21, 41, 42, 54, 59, 66, 73, 79, 87, 89
- Costa Rica**
 - area, trade flows 70
 - export chrysanthemum 70
 - light sums 70, 71
- Country** xviii, xxviii
 - picture, santini 29
- Croatia**
 - import chrysanthemum 47
- cut flowers**
 - global exports & imports xiv, xv, xxiv, xxv, 11
 - top exporters
 - world xv, xxv, 7, 14, 31, 40, 72, 76, 84, 85
 - top importers
 - world 7, 11, 14, 19, 20, 50
 - trade flows Europe 15
 - trade flows world xiv, 11
 - share Netherlands xiv, xv, xxiv, xxv, 11
 - world map 9
- cutting production** xiii, xxiii
 - cutting-from-cutting method 150
 - pictures stools 150
- Czech Republic**
 - import chrysanthemum 47
- D**
- Dance Purple**
 - picture, spray 27
- Danziger Farm, Israeli breeder** 54, 72, 146
- Daruma-zukuri style**
 - using large-sized types 166
- DecoNova Dutch breeder** 49
- decorative bloom form**
 - definition NCS-USA 174, 175
 - picture 175
- Dekker, Dutch breeder** v, 26, 27, 28, 29, 49, 71, 90, 144, 145
- Deliflor, Dutch breeder** v, 26, 27, 28, 39, 49, 84, 91, 144, 145
- Delistar**
 - disbud 39
- Denmark**
 - area, trade flows 45
 - cut flower consumption/capita xiv, xxiv
 - flower consumption/capita xiv, xxiv, 7
 - import chrysanthemum 45
 - import chrysanthemum/capita xiv, xxiv
 - market value flowers 7
 - pot plant consumption/capita xxiv
- Desfontaines, René Louiche**
 - botanist France 133
- direct selling** v
- disbuds**
 - cultural type 173
 - pictures, top cultivars 28
 - plant form 177
 - ranking top cultivars xviii, xxviii, 26, 39
 - rubble & supply FloraHolland vi
- Dolls, Chrysanthemum** 123, 156, 166, 170, 171
- Donglin Temple** 2
- Double Ninth Festival**
 - drinking wine of mum 97, 107
- Dubai** 10, 81, 82
 - Flower Centre 82
 - flower hub 10
- Dümmen Orange**
 - Fides 148
- Dutch auction FloraHolland**
 - centre world wide flower web 13
- Dutch export (see also Netherlands)**
 - carnation 11, 33
 - chrysanthemum 11, 30
 - main countries, from 2007-2013 xvii, 32
 - re-export Lithuania 11, 30
 - trade value €/kg xvii, xxviii
 - cut flowers xiv, xxiv, 8, 11, 31
 - ornamentals xiv, xxiv, 8, 11, 31
 - rose 11, 33
- Dutch imports (see also Netherlands)** 11, 40
- E**
- Eastern Jin Period** 1
- Ecuador**
 - airports 78
 - area, trade flows 76, 79
 - Cayambe International Logistic Flowercentre 79
 - chrysanthemum trade value \$/kg 77
 - Expoflores 77
 - export chrysanthemums 77
 - export carnations 79
 - farms owned by foreigners 77
 - GNI 7
 - light sums xi, xii, xxi, xxii, 71, 79
 - production area 4
 - seaport of Santiago de Guayaquil, 79
 - top exporter cut flowers xiv, xxv, 8, 76
 - ranking xv, xxv
 - top exporter roses 78
 - ranking xv, xxv
 - treaties 79
- Edo-giku, medium size**
 - mobile-petalled types 162
- Edo-/Tokugawa shogunate (1603-1868)** 2
- Egypt**
 - area, trade flows 83
 - importer ornamentals 83
 - light sums 81, 84
- Eleonora Lilac**
 - disbud 39
- Encore**
 - early AYR cultivar 142
- England (see Great Britain)** 132
- equator**
 - popular production areas xii, xxii, 13
- Estonia**
 - area, trade flows 47
 - import chrysanthemum 47
- Ethiopia**
 - area, trade flows 84
 - exporter cut flowers
 - ranking xv, xxv
 - farms, Sher (Barnhoorn) e.o. 84
 - GNI 7
 - light sums xi, xii, xxii, 81, 84
 - top exporter roses
 - ranking xv, xxv
- Euro** xviii, xxviii, 38
 - picture, spray 27
- Europe**
 - Switzerland
 - area, trade flows 46
 - light sums 46
- Europe (28-EU)**
 - area, trade flows 13 - 16
 - Belgium
 - area, trade flows 17
 - light sums 17
 - biggest market value flowers 7
 - cut flower imports
 - shares Africa & America 93
 - exchange rates €/€ effects 14
 - export carnations 16
 - export chrysanthemums

- Russia 15, 16
- world 16
- export cut flowers 14, 15
- export roses 15
- flower markets
 - map 13
- France
 - area, trade flows 18
 - light sums 18
- Germany
 - area, trade flows 19
- global chrysanthemum market
 - Netherlands, main supplier v, xv
- global irradiation 13
- Great Britain
 - area, trade flows 20 - 22
 - light sums 22
- import African carnations 93
- import African chrysanthemums 93
- import African cut flowers 93
- import African roses 92
- import & export carnations 16
- import & export chrysanthemums 15
- import & export cut flowers 15
- import & export roses 15
- Italy
 - area, trade flows 23, 24
 - light sums 24
- light sums 13
- Netherlands
 - area, trade flows 25 - 43
 - light sums 42
- Scandinavia
 - area, trade flows 45
- Spain
 - area, trade flows 44
 - light sums 44
- top importer
 - carnation 93
 - cut flowers 7
 - roses 15, 92
- Europe (Central / East) 47 - 49**
 - area, trade flows 47
 - Baltic States
 - area, trade flows 47
 - Belarus 48
 - Poland
 - area, trade flows 48, 49
 - light sums 48
- Eurostat v, vi**
- Euro Sunny xviii, xxviii, 38**
 - picture, spray 27
- exchange rates v**
 - Colombia xiv, xxiv, 5
 - Dutch chrysanthemum export
 - ruble xiv, xxiv, 6, 31
 - effects v, xiv, xxiv, 3, 5, 6, 8, 10, 14, 21, 88

- exporters world (see also world)**
 - carnation xv, xxv, 72
 - chrysanthemum xv, xxv, 10
 - Colombia to USA, weight & value xiv, xv
 - map world 12
 - weight xv, xxv
 - cut flowers xiv, xxv, 7, 15, 77
 - map world 9
 - diagrams xix, xxix
 - rose xv, xxv, 72, 77
 - world & Dutch shares xiv, xv, 11

F

- Fair Trade Flowers 34**
- Feeling Green Dark xviii, xxviii, 38**
 - picture, spray 27
- Ferry xviii, xxviii**
 - picture, santini 29
- Fides, Dutch breeder v, 25, 26, 27, 29, 90, 91, 92, 148**
- Fiji from Cleangro 141**
- Finland**
 - area, trade flows 45
 - import chrysanthemum 45
- Fiori of Gurrieri**
 - Sicily 23
- FlexPlan, planning software 152**
- FloraHolland v, 33, 37**
 - auction Aalsmeer
 - pictures 34, 36
 - auction Naaldwijk
 - picture 35
 - auction Rijnsburg
 - picture 35, 36
 - chrysanthemum
 - average prices/stem xxviii
 - main grades turnover 25
 - turnover 2014 25
 - eAuction 37
 - FloraMondo 34
 - FloraneXt 37
 - FloraXchange v, 37
 - KOA+ 37
 - main cultivars chrysanthemum xviii, xxviii, 26
 - disbud pictures 28
 - santini pictures 29
 - spray pictures 27
 - monthly supply
 - disbud 26
 - spray 26
 - origin 33
 - PlantConnect 37
 - turnover 2014 25
- Florimark, certificates 34**
- Floritec Dutch breeder 49, 91, 92, 144**
- Flos Chrysanthemi Morifolii**

- action in TCM 102
- flower consumption v, 6, 7**
 - economic factors xiii, xxiii, 6
 - GNI xiv, xxiv, 7
- flower production world 4**
- Fortune, Robert plant hunter 2, 18, 116, 134, 135, 136, 141**
 - Japanese Exhibition types 155
- Frampton, British YR pioneer 22, 140**
- France xii**
 - area, trade flows 18
 - cut flower consumption/capita xiv
 - flower consumption/capita xiv, 7
 - flower markets
 - Rungis at Paris 18
 - SICA MAF at Hyères 18
 - history, origin & spreading 132, 133
 - Blancard, Pierre-Louis
 - 'Old Purple' 132
 - breeding in the West 136, 137
 - Chevalier, Auguste 133
 - Desfontaines, René L. 133
 - Jussieu, Antoine Laurent de 133
 - Thouin, André 133
 - import chrysanthemum 18
 - value & weight xvi, xxvi
 - import chrysanthemum/capita xiv
 - light sums 18
 - market value flowers 7
 - production & trade 4
- freight costs**
 - by air xiii, xxiii, 10, 59
 - by sea xiii, xviii, xxiii, xxviii
 - general 5
- Froggy**
 - santini 39
- Fukusuke-zukuri style**
 - using large-sized types 166

G

- Gaisma.com v**
- Gardening China, Japan**
 - chrysanthemum 105
- GDP Gross Domestic Product**
 - 28-EU, USA xiii
 - Europe 2015 xxvii
 - flower consumption xiv, xxiv, 6
 - flower trade xiii, xxiii
 - France, Germany, Gr. Britain xviii, xxviii
 - Kenya 88
 - Tanzania 90
 - Uganda 91

- Gediflora, Belgian breeder** 17, 146
- GeoModel Solar s.r.a.** v
- Germany**
- area, trade flows 19
 - cut flower consumption/capita xiv, xxiv
 - flower consumption/capita xiv, xxiv, 7
 - flower sales retailers xiv, xxiv
 - import chrysanthemum 19
 - value & weight xvi, xxvi
 - import chrysanthemum/capita xiv, xxiv
 - market value flowers 7
 - production & trade 4
 - top exporter
 - ornamentals xiv
 - top importer
 - cut flowers xiv, xxiv, 8, 19
 - ornamentals xiv
 - roses 19
 - Veiling Rhein-Maas 19
- Ghana**
- light sums 81, 84
- Glasshouse Crop Research Institute**
- Littlehampton 22
- global financial crisis**
- 2007-2008 v, 6
- globalisation** v, xi, xii, xiii, xxi, xxii, xxiii, 8, 40, 43, 146, 148
- consequences
 - cut flowers & pot plants xii, xxii
- global trade flows**
- cut flowers xiv, xv, xxiv, xxv, 11
 - map import & export 9
- GNI Gross National Income**
- flower consumption xiv, 6, 7
- Goldstock, English breeder** 141
- grafting on Artemisia rootstock**
- picture 171
- Grassly**
- santini 39
- Great Britain** v
- area, trade flows 20 - 22
 - cut flower consumption/capita xiv, xxiv
 - exchange rates 5, 21
 - flower consumption/capita 7
 - flower sales retailers xiv, xxiv
 - history, origin & spreading 134, 136
 - Chusan daisy 135
 - Philip Miller 132
 - Robert Fortune, plant hunter 134
 - light sums 22
 - market value flowers 7
 - production & trade 4
 - top consumer chrysanthemum xxiv, 22
 - top import chrysanthemum/capita xiv, xxiv
 - top importer
 - carnation 21
 - chrysanthemum 10, 20
 - value & weight xxvi
 - cut flowers xiv, xxiv, 20
 - ornamentals xiv, xxiv
 - top importer Europe
 - chrysanthemum xiv, xxiv
 - top importer world 7
 - top share chrysanthemum in import xiv, xxiv
- Greece**
- import chrysanthemum 47
- Guangdong**
- centre horticulture 5
- Guatemala**
- area, trade flows 70
 - light sums 71
- Guk-hwa**
- chrysanthemum in Korean 119
- H**
- Hangjuhua in TCM** 104
- Hangul, Korean script** 119
- Hanja, Chinese script** 99, 118, 119
- Hanzi, Chinese script in Korea** 99
- Hawaii from Cleangro** 141
- Henan, China**
- centre of origin chrysanthemum 95
- Hibiya Park, Tokyo**
- picture 170
- Higo-giku-kadan style**
- using medium-sized types 169
- Higo-giku, medium-sized** 163
- Hiragana, Japanese script** 118
- Hiro-mono-giku, O-giku** 158
- chromosomes 156
- Hoek, L.A., Dutch breeder** 25, 39, 143, 144
- Hōki-zukuri style**
- medium sized Saga & Ise-giku types 166
- Holidays**
- flower gifts 26
- Hong Kong**
- GNI 7
- Horim**
- Hoek 25
- HQS 8-hydroxyquinoline**
- vase life 180
- Hubei with Wuhan as capital**
- centre of origin chrysanthemum 95
- hubs**
- Miami, Schiphol 10
- Hundred Bloom Chrysanthemums**
- picture 172
- Hungary**
- import chrysanthemum 47
- Hyères**
- Dutch auction 18
- I**
- Ichimonji-giku**
- Hiro-mono-giku, O-giku 160
- Ichiroku-zukuri style**
- using medium-sized types 169
- Ikebana**
- Buddhism 120
 - history 120
- Illini Springtime**
- University of Illinois 142
- immortality from chrysanthemum** 97, 101, 108, 155
- importers world (see also world)**
- 28-EU 15
 - chrysanthemum xvi, xxvi, 10
 - world map 12
 - cut flowers 7
 - world map 9
 - diagrams xix, xxix
- imports ornamentals, cut flowers**
- world & Dutch shares 11
- India**
- area, trade flows 60
 - GNI 7
 - light sums 60
 - production area 4
- Indianapolis**
- early AYR cultivar 142
- Inga**
- disbud 39
- Intergreen** 41, 74
- import Colombian mums 21
- intermediate incurve bloom form**
- definition NCS-USA 174, 175
- International Code of Botanical Nomenclature (ICBN)**
- Chrysanthemum × morifolium Ramat. xi, xxi, 96, 97, 133
- International Code of Nomenclature of Cultivated Plants (ICNCP)**
- Chrysanthemum Indicum Group xi, xxi, 96, 133
 - classification winter-hardy garden plants 178
- internationalisation**
- Dutch chrysanthemum production xi, xxi, 86
 - Dutch growers in Africa xi, xxi
- Int. Women's Day** vi, 26, 51, 52
- Ippon-shitate style**
- using large-sized types 165
- Iran**
- light sums 81
- Iraq**
- light sums 81

irregular incurve bloom form

- definition NCS-USA 174 - 175
- picture 175

Ise-giku, Chū-giku 161**Israel**

- area, trade flows 54
- light sums 54
- shifts to niche products 54

Italy

- area, trade flows 23
- cut flower consumption/capita xiv
- flower consumption/capita 7
- import chrysanthemum 23
- light sums 24
- market value flowers 7
- production area 4
- Sicily 24

Ito-giku, spider types 158**J****Japanese chrysanthemum throne**

- Japanese Imperial throne 1869
- Imperial Seal 122

Japanese Exhibition types 153 - 170

- chromosomes 156
- Chū-giku, medium-size 160
 - Chōji-giku 163
 - Edo-giku 162
 - Higo-giku 163
 - Ise-giku 161
 - Saga-giku 161
- early autumn to winter flowering 156
- Ko-giku, small-size 164
 - Azami 164
 - Ko-giku 164
 - Nanako-giku 164
- O-giku, large size
 - Atsu-bashiri 157
 - Atsu-mono 157
 - Hiro-mono-giku 158
 - Ichimonji-giku 160
 - Japanese Spiders, box 159
 - Kuda-mono-giku 158
 - O-tsukami 157

Japanese Exhibition types & styles 165, 171

- Bonsai-zukuri, with small-sized types 170
- Daruma-zukuri, with large-sized types 166
- Fukusuke-zukuri, with large-sized types 166
- Grafting, 100-1000 bloom domes 171
- Higo-giku-kadan, with medium-sized types 169
- Hōki-zukuri, with medium-sized types 166

- Ichiroku-zukuri, with medium-sized types 169
- Ippon-shitate, with large-sized types 165
- Kengai-zukuri, with small-sized types 169
- Kiku-ningyō-zukuri, with small-sized types 170
- Nanahon-shitate, with large-sized types 165
- Ozukuri, with large-sized types 165
- Sanbon-shitate, with large-sized types 165
- Senrin-zukuri, with large-sized types 165
- Shichigosan-zukuri, with medium-sized types 167
- Shino-zukuri, with medium-sized types 168
- Tenchin-zukuri, with medium-sized types 168
- tricolor color patterns, equine regalia 156

Japanese Imperial family

- Chrysanthemum & Paulownia 122

Japanese scripts 118

- chrysanthemum in Japanese & Korean 119
- Romaji, romanization 118

Japanese summer-to-autumn flowering cultivars 156**Japan, history**

- origin & spreading 117 - 123
 - 200 BC to 900 AD, Chinese culture 117
 - Chrysanthemum Festival 910 122
 - chrysanthemum, the national flower 910 AD 122
 - Edo-period (1603-1868), popularity of mum 122
 - emperor Go-Toba (1180-1239) & imperial seal 122
 - emperor Nintoku 117
 - emperor Saga & Saga-kiku 121, 122
 - Exhibition types 155 - 172
 - Gakiku 1519, 100 mum paintings 122
 - Gakiku & Breynius, 1688 123
 - Hakata, port to China, Korea 117
 - Heian period (794 to 1185) mum poetry 121
 - Ikebana 120
 - Kūkai (774-835), Buddhism 121

- literature on chrysanthemum 122, 123
- Nara period (710-784) & Buddhism 120
- Ritsuryō culture 117
- Shotoku (574-624) & Buddhism 117
- suggested mum ancestors 117

Japan, trade

- area, trade flows 61 - 62
- flower consumption/capita 7
- light sums 61
- market value flowers 7
- production area chrysanthemum xi, xxi, 4, 61
- Seikoen Co. Ltd., Hiroshima 61
- top importer chrysanthemum 10, 62
 - main suppliers xviii, xxviii
 - value & weight xvi, xxvi
- top importer cut flowers 62

Jiangxi, China xi, xxi, 1

- centre of origin chrysanthemum 95

Jiuhua Jú 1**Jiujiang**

- home of Tao Yuanming 1

John Lennon

- santini 39

Joluplant, Belgian breeder 146**Jordan**

- light sums 81

Jordi

- picture, santini 29

JP Cuttings

- Dutch propagator 92

jú huā xi, xxi**Jussieu, Antoine Laurent de**

- botanist France 133

K**Kaempfer, 1712**

- physician Deshima 155

Kaizaki-giku, small-sized type

- shell pompon 164

Kana

- Furigana-Kana 118
- Okurigana-Kana 118

Kanbun, Japanese script 118**Kanji, Japanese script 118****Karibu**

- picture, santini 29

Katakana, Japanese script 118**Kengai-zukuri style (Cascade)**

- using small-sized types 169

Kenya

- area, trade flows 85 - 88
- Dutch growers 85

- exchange rates 88
- export chrysanthemum 86
- GNI 7
- light sums xi, xii, xxi, xxii, 81, 84, 87
- logistics, sea transport 87
- map 85
- temperatures 85
- top exporter cut flowers 86
 - ranking xv, xxv
- top exporter roses 86
 - ranking xv, xxv
- Kezashi-giku**
- picture hairy type 174
- Kientzler GmbH, German breeder** 19, 146
- kiku, chrysanthemum**
 - giku in combinations 156
 - in Hiragana script 119
 - in Katakana script 119
 - in Korean Hangul script 119
- Kikujidō, chrysanthemum boy**
 - immortality by dew 155
- Kiku-ningyō-zukuri dolls**
 - using small-sized types 170
- Ko-giku, small-sized type** 164
- Korea**
 - area, trade flows 63
 - chrysanthemum in Korean script 119
 - exporter chrysanthemums
 - ranking xv, xxv
 - GNI 7
 - history, origin & spreading 117, 123
 - influx Chinese culture 117
 - typical Korean mum species 117
 - import chrysanthemum 63
 - light sums 56
 - production area 4
- Kuda-mono-giku, spider types** 158
 - ai-kuda, medium tube 158
 - futo-kuda, thick tube 158
 - hari-kuda, long, fine tube 158
 - hoso-kuda, thin tube 158
 - picture thick-quilled / spider type 176
- Kunming, Chinese centre** xii, xxii, 25, 56, 58, 59, 60
- Kuwait**
 - GNI 7
 - light sums 81
- L**
- Lamarck, Jean-Baptiste de**
 - botanist 133
- Lange, Wim**
 - first year-round grower Netherlands xi, xxi, 149
- Langton, Dr. F. Allen**
 - GCRI Littlehampton 22
- Lǎozì, Lao Zi**
 - Tao Te Ching, immortality 108
- Latvia** vi
 - area, trade flows 47
 - import chrysanthemum 47
- Layn, Jacob**
 - falsely for Jacob Breyne 128
- Liège Airport**
 - hub Ethiopian cut flowers 17
- light** v, 3, 14, 150, 151, 152
 - Danzig, Jacob Breyne 130, 131
 - production factor xii, xxii
 - requirement
 - carnation 14
 - chrysanthemum xii, xxii
 - rose 14
 - sums
 - comparison levels world xii, xxii
 - tropics & extremes xii, xxii
 - tables
 - Africa 84
 - Australia & New Zealand 57
 - Belgium 17
 - Brazil 80
 - Central America & Colombia 72
 - China 58
 - Ecuador 79
 - France 18
 - Great Britain 22
 - Italy 24
 - Japan 61
 - Kenya 87
 - Netherlands 42
 - North America 65
 - Russian Federation 50
 - Spain & Tenerife 44
 - Turkey & Israel 54
 - Wuhan 96
- lighting**
 - photoperiodic 142, 149
 - Post & Cathey 149
 - supplemental 4, 14, 145
- Lindy White** xviii, xxviii
- Lineker from Goldstock** 141
- literature on chrysanthemum** 137, 138
- Lithuania** vi
 - area, trade flows 47
 - exporter chrysanthemums
 - ranking xv, xxv
 - import chrysanthemum 47
 - re-export Dutch chrysanthemums xv, xvi, xxv, 11, 30
 - trade value chrysanthemum \$/kg xviii, xxviii
- Liu Měng in 1104 AD**
 - Chrysanthemum manual 115
- logistics**
 - air, sea, land xiii, xxiii
- Long Island Beauty** 142
- Lúshān Mountain** 1
- Luxembourg**
 - GNI 7
- M**
- Machin, Dr. Barrie, breeder**
 - first book on AYR growing 140
- mad / mobile-petalled Japanese types**
 - Edo-giku 162
- Maher, Dennis G. mum expert** v, 155
- Malawi**
 - light sums 81
- Malaysia**
 - area, trade flows 63
 - Cameron Highlands 63
 - dominating chrysanthemum market Japan xv, xxv
 - imports & exports 63
 - light sums xii, xxii, 56, 64
 - top exporter chrysanthemum xviii, xxviii, 10, 63
 - ranking xv, xxv
- Mandarin**
 - santini 39
- maps**
 - chrysanthemum
 - Dutch exports 32
 - gene centres 95
 - spreading Buddhism & centre of origin 112
 - spreading to world 114
 - trade flows world 12
 - countries
 - Asia 56
 - Baltic States 47
 - Brazil & states 80
 - China, Lushan 1
 - China, provinces 58
 - Colombia & districts 73
 - Europe 13, 32
 - Hanseatic League 127
 - Israel 54
 - Japan, provinces 61
 - Kenya xix, xxix, 85
 - Malaysia 63
 - Mexico, Central America 69
 - Netherlands 25
 - Russian Federation 52
 - Scandinavia 45
 - Sicily 24
 - Turkey 55
 - United Arab Emirates 82
 - Viet Nam 64
 - cut flowers
 - trade flows world 9

- light
 - Africa & Middle East 81
 - Australia 57
 - China & Wuhan 95
 - Costa Rica 70
 - Europe 13
 - Great Britain 22
 - India 60
 - Italy 24
 - Japan 61
 - Kenya 87
 - Mexico 69
 - Poland 48
 - South Africa & Tanzania 89
 - South America & Caribbean 71
 - South-East Asia 56
 - Spain 44
 - Switzerland 46
 - Thailand 64
 - Uganda 91
 - Ukraine 53
 - United States of America 66
 - vegetation zones
 - Africa & Middle East 83
 - Marek**
 - picture, santini 29
 - market value**
 - flower consumption 7
 - Matricaria Japonica minore & maxima**
 - Jacob Breyne 131
 - Maunder Minimum (1645-1710)**
 - cold period Europe 131
 - Mefo**
 - early AYR cultivar 142
 - Meng Liu, 1104**
 - summer flowering types 155
 - Mexico**
 - area, trade flows 68 - 69
 - export chrysanthemum 69
 - light sums 69
 - production & trade 4
 - Mikkelsen, Jim 67, 149**
 - first year-round grower xi, xxi
 - Miller, Philip (1691-1771)**
 - Chelsea Physic Garden with mum 131, 132
 - Mino-giku**
 - Hiro-mono-giku, O-giku 160
 - Morocco**
 - area, trade flows 83
 - light sums 81, 84
 - Mount Lu 2**
 - MPS, certification 19, 34, 46, 92**
 - Mrs. R.C. Pulling**
 - chromosomes 156
 - Jap. type, clutching fingers 157
 - multiflora types (see also charms)**
 - 17, 18, 137, 142, 146, 148, 173, 177, 178
- N**
- Nakamura, Yukio Chrys. Fed. v, 155**
 - Nanahon-shitate style**
 - using large-sized types 165
 - Nanako-giku, small-sized type 164**
 - NASA Langley Research Center v**
 - NCS-UK Classification 174**
 - colours 176
 - NCS-USA Classification**
 - bloom forms 175
 - Neo-Confucianism**
 - Wang Yangming & Motoori Norinaga 112
 - Netherlands, history**
 - origin & spreading 143 - 148
 - Breyne, Jacob 126 - 131
 - Breyne, Johann Philipp 130
 - Netherlands, trade**
 - area, trade flows 25 - 43
 - chrysanthemum consumption/capita xiv, xxiv, 43
 - chrysanthemum domestic use xviii, xxviii, 43
 - chrysanthemum growing
 - holdings & acreage 37
 - productivity xii, xxii, 38
 - chrysanthemum supply
 - monthly FloraHolland 26
 - export disbuds Russia 51
 - top cultivars 26
 - cut flower consumption/capita xiv, xxiv
 - disbuds
 - ranking top cultivars 26, 39
 - dominating chrysanthemum markets Europe xv, xxv
 - effects fall of ruble xiv, xxiv
 - export disbuds Russia 4, 6, 15, 38, 39, 52
 - FloraHolland
 - turnover 25
 - turnover chrysanthemum 38, 39
 - flower consumption/capita xiv, 7
 - globalisation 43
 - global shares im- & export xiv, xxiv, 11
 - growing conditions xii, 25, 42
 - importer chrysanthemums
 - share in world trade 11
 - light sums xii, 42
 - market value flowers 7
 - pictures top disbuds 28
 - pictures top santinis 29
 - pictures top sprays 27
 - production & trade 4, 25
 - re-export chrysanthemums
 - to Russia by Lithuania 11, 47
 - santini
 - ranking top cultivars 26, 39
 - sea transport
 - vase life chrysanthemum 41
 - vase life rose 42
 - sprays
 - ranking top cultivars 26, 38
 - top exporter carnations 33
 - ranking xv, xxv
 - share in world trade 11
 - top exporter chrysanthemums
 - CBS & Eurostat 11, 30
 - Great Britain, main client xxvi, 30
 - main clients, 2007-2013 xvii, 30, 32
 - ranking xxv
 - Russia, main client disbuds 30
 - share in cut flower exp. 31
 - share in world trade xv, xvi, 11
 - tables 30
 - trade value \$/kg xviii, xxviii
 - trade value €/kg xvii, xxviii
 - value & stems (CBS) xvi
 - value & weight xvi, xxv
 - top exporter cut flowers xiv, xxiv, 8, 31
 - CBS & Eurostat 31
 - ranking xv, xxv
 - share in world trade 11
 - top exporter ornamentals 8, 31
 - share in world trade 11
 - top exporter roses 33
 - ranking xv, xxv
 - share in world trade 11
 - top importer carnations 33
 - share in world trade 11
 - top importer cut flowers xiv, xxiv, 40
 - share in world trade 11
 - top importer ornamentals xiv, xxiv
 - share in world trade 11
 - top importer roses 33
 - share in world trade 11
 - WUR
 - Wageningen University & Research Centre 41
- New Zealand**
 - area, trade flows 57
 - light sums 57
- Nicaragua**
 - area, trade flows 70
 - light sums 71
- North America**
 - global chrysanthemum market
 - Colombia, main supplier v
- Norway**
 - area, trade flows 45

- flower consumption/capita xiv, xxiv, 7
 - import chrysanthemum 45
 - import chrysanthemum/capita xiv, xxiv
 - market value flowers 7
- O**
- Old Purple**
- picture 'Indian Chrysanthemum' 132
- Oman**
- light sums 81
- Onarida**
- picture, disbud 28
- Ornamentals**
- production world 8, 11
- Oshu giku (O-tsukami) 157**
- O-tsukami, O-giku 157**
- outdoor cultivars**
- Beppie 143
 - Gompie 143
 - Heidi 143
 - Juweel 143
 - Lilian Hoek 143
 - Margaret 143
 - Minstrel 143
- outdoor cultivars disbuds**
- Alec Bedser 143
 - Astro 143
 - Bornholm 143
 - Hanenburg 143
 - Ja Dank 143
 - Migoli 143
 - Tom Pearce 143
- Ozukuri style**
- using large-sized types 165
- P**
- Pagoda Mum**
- picture 172
- Palm Green xviii, xxviii**
- picture, santini 29
 - santini 39
- penjing, potted plants**
- bonsai 105
- Pen ts'ao Ching 105**
- Běncào Jīng Jì Zhū 103
 - chrysanthemum immortality 97
 - Shénnóng bēncào jīng The Divine Farmer's Herb-Root Classic 102
- peso, Colombian**
- effects trade xiv
- photoperiodism v**
- phytochrome 149
- Pink Gin from Goldstock 141**
- Poland**
- area, trade flows 48 - 49
 - cut flower cons./capita xiv
 - GNI 7
 - import & export 49
 - light sums 48
 - production area 48
 - University of Technology and Life Sciences in Bydgoszcz chrysanthemum research 49
- Polaris from Goldstock 141**
- pompon bloom form**
- definition NCS-USA 174 - 175
 - picture 175
- Pompons, early**
- Lebois 135
- PPP Purchasing Power Parity**
- flower consumption 7
- product codes**
- flowers v
 - statistics vi
- production areas**
- chrysanthemum world xiii, xxiii, 4, 148
 - cut flowers world v, xi, xv, xxi, xxv, 4, 13, 40, 43
 - cuttings xiii, xxiii, 25
- production factors**
- comparison & light xii
- production values**
- cut flowers & pot plants xii
- production values flowers**
- top countries 4
- product km per energy quatum 41**
- protomum 1, 2**
- definition 95
- Pulling, Mrs. R.C.**
- box on breeder 139
 - breeder H.J. Jones 143
 - picture 139, 143
- purchasing power parity (PPP)**
- flower consumption 6
 - Kenya 88
 - main countries 7
 - Tanzania 90
- Q**
- Q₁₀ temperature quotient**
- vase life 180
- Qatar**
- GNI 7
 - light sums 81
- quality v**
- sells in prosperous countries xviii
- quill bloom form**
- definition NCS-USA 174 - 176
 - fantasy /cactus flower 158
 - picture 175
- R**
- radiation**
- see 'maps light' & 'light tables' 13
- Ramatuelle, Thomas-Albin d'Audibert de**
- botanist 133
- Rayonnant-types (1897 Lacroix, France) 143, front page**
- Reagan Cream**
- spray 38
- Reagan Dark Splendid**
- spray 38
- Reagan Improved**
- spray 38
- Reagan Sunny**
- spray 38
- Reagan White**
- spray 38
- reefer (see container / sea transport) 41, 65, 66**
- reflex bloom form**
- definition NCS-USA 174 - 175
 - picture 175
- regular incurve bloom form**
- definition NCS-USA 174- 175
 - picture 175
- Resomee Dark**
- picture, disbud 28
- response groups 177**
- AYR cultivars selection from middle to late flowering types 156
- retailers**
- flower sales xiv
- Rhyne, Willem ten (1649-1700)**
- provided Breyne with mum seeds 126, 128, 130
- road transport 8**
- Rocky**
- santini 39
- romaji**
- romanization of Japanese words 118
- Romania**
- import chrysanthemum 47
- rose**
- share in cut flower exports world 11
 - share in cut flower imports world 11
 - share in cut flower trade world xiv, xv, 11
 - steady increase global imports xv
 - top exporters world xv, xxv, 11, 33, 72, 77, 84, 85
 - top importers world 11, 15, 17, 19, 21, 33, 52, 66, 93
 - trade flows Europe 15
 - trade flows world 11

Rossano

- picture, disbud 28

Royal Horticultural Society

- bloom forms 175

Royal Van Zanten *v.* 26, 27, 28, 29,

49, 86, 91, 92, 137, 141, 143,
148, 149

- first Dutch supplier of AYR cuttings 149

ruble

- fall & consequences *vi*, *xiv*, *xxiv*, 6, 31

Rungis 18**Russian Federation** *vi*

- area, trade flows 50 - 52
- cut fl. consumption/capita *xiv*
- Dutch export chrysanthemum monthly supply disbuds, graphs 51
- effects fall of ruble *xiv*
- GNI 7
- import chrysanthemum 50
- top importer carnation 52 chrysanthemum 10, 50 value & weight *xvi*, *xxvi* cut flowers *xiv*, 7 rose 52

Rwanda

- light sums 81

Ryōri-giku

- kitchen mums 155

S**Saba** *xviii*, *xxviii*, 38

- picture, spray 27

Saga-giku, Chū-giku 161**Salter, John, English breeder**

- the 'father' of chrysanthemums in England 136

Sanbon-shitate

- using large-sized types 165

santini

- minisprays since 1990s 148
- pictures, top cultivars 29
- ranking top cultivars *xviii*, *xxviii*, 26, 39

Saudi Arabia

- area, trade flows 81, 82
- GNI 7
- light sums 81

Sauvé-Guittet, French breeder 18**Scandinavia**

- Denmark, Finland, Norway, Sweden

area, trade flows 45

- import chrysanthemum 45

sea transport *xiii*, 8, 13, 21, 41, 42, 54, 59, 66, 73, 79, 87, 89, 178, 179, 180

- conditions temperature sum *xiii*, 179, 180

- Wardian Case 134

Selecta 91**semi-double bloom form**

- picture 175

Senrin-zukuri style

- using large-sized types 165

Shamrock

- disbud 39
- picture, disbud 28

Shasta

- early AYR cultivar 142

Shénnóng bēncào jīng The Divine Farmer's Herb-Root Classic

- Pen ts'ao Ching 102

Shen-Nong-Jia Mountain area

- habitat of *C. indicum* L. 98

Shichigosan-zukuri

- using medium-sized types 167

Shi Ju in 1242

- Manual of Hundred Chrysanthemums 115

Shino-zukuri style

- using medium-sized types 168

Shoesmith, Harry breeder 140**Shun-giku**

- edible mum 155

Sicily

- production centre 24

Singapore

- GNI 7

single & semi-double bloom form

- definition NCS-USA 174, 176

Slovakia

- import chrysanthemum 47

Slovenia

- import chrysanthemum 47

Smith, Elmar D., breeder 142**Snapper from Goldstock** 141**Snowdon from Goldstock** 141**solar radiation** *v*

- see maps light Europe as first 13

South Africa

- area, trade flows 89
- export chrysanthemums 89
- exporter chrysanthemums ranking *xv*, *xxv*
- light sums 81, 84, 89
- sea transport 89

Southern Glasshouse Produce 22**Spain**

- area, trade flows 44
- cut flower consumption/capita *xiv*
- exporter carnations ranking *xv*, *xxv*
- flower consumption/capita 7
- import chrysanthemum 44

- light sums 44
- market value flowers 7

special forms

- 100-1000-blooms, pagodas 177

spider bloom form

- definition NCS-USA 174 - 176
- Japanese Spiders, box 159
- picture 175

Spider White

- spray 38

Spinner

- picture, spray 27

Spoky

- picture, santini 29
- santini 39

spoon bloom form

- definition NCS-USA 174, 176
- picture 175

sprays

- cultural type 173
- pictures, top cultivars 27
- plant form 177
- ranking top cultivars *xviii*, *xxviii*, 26, 38

Stallion

- spray 38

Suchow

- Garden City or Venice of the East 106

Sumitomo, Katsuhiko scientist *v.* 155**summer flowering types**

- Meng Liu 1104 155

supply chain *vi***Sweden**

- area, trade flows 45
- cut flower consumption/capita *xiv*, *xxiv*, 7
- import chrysanthemum 45
- import chrysanthemum/capita *xiv*, *xxiv*

Switzerland

- area, trade flows 46
- cut flower consumption/capita *xiv*, *xxiv*
- GNI 7
- import chrysanthemum 46
- light sums 46
- pot plant consumption/capita *xiv*, *xxiv*

Syngenta 49, 67**T****Taiwan**

- area, trade flows 60
- light sums 56

Tanacetum cinerariifolium (Trevir.) Schultz Bip.

- *Chrysanthemum cinerariifo-*

- lium (Trevir.) Vis. 104
- Táng Period (618-907)** 2
- Golden Age Art & Literature 113
- Tanzania**
- area, trade flows 90
 - light sums 81, 84, 89
 - propagation farms 90
- Taoism**
- chrysanthemum in literature 108
 - garden design 107
 - Yin & Yang 108
- Taoism & Confucianism**
- laissez-faire vs. duties 108
- Táo Yuānmíng (365-427)** xi, xxi, 1, 97, 100, 102, 103, 108, 110, 112, 117
- Chü-hsien, Chrysanthemum City 109
 - "I picked chrysanthemums by the eastern hedge" 110
 - life 109
 - life history, poems 109
 - Nine-Flowered Chrysanthemum, *Cyclopedia of Flowers* (1621) 110
 - poem *Drinking Wine* 109
- TCM Traditional Chinese Medicine**
- see Chinese Medicine, Traditional 97
- Tedcha**
- santini 39
- temperature quotient Q_{10}**
- vase life 180
- temperature sum**
- vase life 179
- Tenchin-zukuri style**
- using medium-sized types 168
- Thailand**
- area, trade flows 64
 - centuries, 11th - 13th 2
 - GNI 7
 - import chrysanthemum 64
 - light sums 56
 - production area 4
- thistle bloom form**
- picture 175
- Thouin, André**
- *Jardin des Plantes*, Paris 133
- Thousand Bloom Dome**
- picture 172
- Thunberg's *Flora japonica* (1784)**
- *Chrysanthemum indicum* L. near Deshima 130
- Tokugawa** 2
- trade certificates**
- Florimark 34
- trade flows**
- chrysanthemum world map 12
 - cut flowers world map 9
- transit trade**
- Lithuania vi
- transport costs**
- air, sea, land xiii
- tropics**
- light levels xii
- Turkey**
- area, trade flows 55
 - exporter carnations ranking xv, xxv
 - map of floricultural centres 55
- Tweety**
- santini 39
- U**
- Uganda**
- area, trade flows 91 - 92
 - GNI 7
 - light sums 81, 84, 91
 - propagation farms 91
- Ukraine**
- area, trade flows 53
 - GNI 7
 - import chrysanthemum 53 value & weight xvi, xxvi
 - light sums 53
- UN comtrade** v, vi
- Unique Sunny**
- picture, santini 29
- United Arab Emirates**
- area, trade flows 82
 - Dubai Flower Centre 82
 - light sums 81
- United Kingdom (UK)**
- see Great Britain 20
- UPOV International Union for the Protection of New Varieties of Plants** 142
- USA**
- area, trade flows 65 - 67
 - Colombian monopoly chrysanthemum market xv, xxv
 - cut flowers most popular 67
 - flower consumption/capita 7
 - LAX, Los Angeles, flower hub 66
 - light sums 65, 66
 - market share retailers 67
 - market value flowers 7
 - Miami, Florida, flower hub 66
 - pot plants most popular 67
 - production & trade 4
 - share chrysanthemum in import xiv, xxiv
 - top importer carnations 65 chrysanthemum xv, xxv, 10, 65
- value & weight xvi, xxvi
- cut flowers xiv, 7, 65
 - ornamentals xiv, xxiv
 - rose 66
- V**
- valuta (see also exchange rates)**
- effects xiv
- vase life** 178, 180
- 8-HQS 180
 - Chrysal 180
 - essential oil *Artemisia* 180
 - temperature quotient Q_{10} 180
 - temperature sum 179, 180
 - Universal 180
- Veiling Rhein-Maas** 19
- Vesuvio Green**
- spray 38
- Viet Nam** xii
- area, trade flows 64
 - exporter chrysanthemum xviii, xxviii, 64 ranking xv, xxv
 - GNI 7
 - light sums xii, xxii, 56
- VOC (Dutch East India Company)** 128
- Deshima, Japan 130
- Vygold**
- santini 39
- Vymini**
- santini 39
- W**
- Wardian Case** 134
- Westland**
- spider 25
- Widmer, dr. Richard** **University of Minnesota**
- breeder of cushion plant form 177
- winter-hardiness** 178
- *Chrysanthemum arcticum* L. 178
 - *Chrysanthemum × morifolium* Ramat. 178
 - *Chrysanthemum nipponicum* (Franch. ex Maxim.) Matsum. 178
 - *Chrysanthemum × rubellum* Sealy 178
 - *Chrysanthemum sibiricum* Turcz. ex DC. 178
 - *Chrysanthemum weyrichii* (Maxim.) Miyabe 177
 - *Chrysanthemum yezeense* Maek. 178
 - *Chrysanthemum zawadskii* Herbich subsp. *coreanum* (Nakai) Y. N. Lee 178

- Chrysanthemum zawadskii
Herbich subsp. latilobum
(Maxim.) Kitag. 178
- world**
- top exporters carnation xv, xxv
 - Colombia 72
 - diagram xix, xxix
 - Netherlands 11, 33
 - Turkey 55
- top exporters chrysanthemum
xv, xxv, 10
 - 28-EU 16
 - Colombia 72
 - diagram xix, xxix
 - Malaysia 63
 - map 12
 - Netherlands 11, 30
- top exporters cut flowers xiv,
xv, 7
 - 28-EU 14, 15
 - Colombia 72
 - diagram xix, xxix
 - Ecuador 77
 - Ethiopia 84
 - Kenya 85
 - map 9
 - Netherlands 11, 31
- top exporters ornamentals
 - Colombia 72
 - diagram xix, xxix
 - Ecuador 76
 - Germany xiv, xxiv
 - Netherlands xiv, xxiv, 8, 31
- top exporters rose xv, xxv
 - Colombia 72
 - diagram xix, xxix
 - Ecuador 78
 - Ethiopia 84
 - Kenya 86
 - Netherlands 33
- top importers carnation
 - 28-EU 16
 - diagram xxix
 - Great Britain 21
 - Japan 62
 - Netherlands 33
 - Russian Federation 52
 - USA 65
- top importers chrysanthemum
10
 - diagram xxix
 - Great Britain 20
 - Japan 62
 - map 12
 - Russian Federation 50
 - USA 65
- top importers cut flowers 7
 - 28-EU 14, 15
 - diagram xxix
 - Germany 19
 - Great Britain 21
- Japan 62
- Netherlands 40
- Russian Federation 50
- USA 67
- top importers ornamentals
 - diagram xxix
 - France 40
 - Germany xiv, xxiv, 19, 40
 - Great Britain xiv, xxiv, 20, 40
 - Netherlands xiv, xxiv, 11, 40
 - USA xiv, xxiv, 20, 40, 67
- top importers rose
 - 28-EU 15
 - diagram xxix
 - Germany 19
 - Netherlands 11, 33
 - Russian Federation 52
 - USA 66
- trade flows 7
- Wuhan, capital of Hubei, China** 3,
22, 58, 59, 96, 97
- light requirement mum v, 14,
42
- light sums 3
- temperatures 42
- WUR**
- Wageningen University &
Research Centre v, 41, 74
- X**
- Xclusive Cuttings** 91
- Y**
- Yen**
- santini 39
- yen, exchange rate 61, 62, 63
- Yoder Brothers, US breeder 142
- Yoko Ono**
- santini 39
- Yuānmíng, Táo, see also Táo**
- Yuānmíng** xi, xxi
- “at the Eastern Fence” with
poem of Su Shi, 11th century
108
- first record of chrysanthemum
1
- Yuán Qū** 1
- Yunnan**
- flower production 5
- Z**
- Zambia**
- area, trade flows 92
- light sums 81, 84, 89
- Zembla** xviii, xxviii, 38, 39
- picture, spray 27
- Zembla Cream** xviii, xxviii, 38
- picture, disbud 28
- picture, spray 27
- Zembla Sunny**
- picture, spray 27
- Zembla Yellow** xviii, xxviii, 39
- Zhāng Jì, poet, 9th century**
- chrysanthemum can be picked
108
- Zimbabwe**
- area, trade flows 92
- light sums xxii, 81, 84, 89
- Zivena**
- picture, disbud 28