

A Cholinergic

*Unless otherwise noted all references are to Duke, James A. 1992. Handbook of phytochemical constituents of GRAS herbs and other economic plants. Boca Raton, FL. CRC Press.

Plant	# Chemicals	Total PPM
<i>Abrus precatorius</i> Jequerity; Minnie-Minnies; Red Beadvine; Weatherplant; Licorice Vine; Prayer Beads; Crab's Eye; Lucky Bean; Love Bean; Coral Beadplant; Precatory Bean; Weathervine; Rosary Pea; Indian Licorice; Jequirity Bean	1	
<i>Achillea millefolium</i> Yarrow; Milfoil	1	
<i>Acorus calamus</i> Sweet Calamus; Myrtle Flag; Sweetroot; Flagroot; Calamus; Sweetflag	1	
<i>Adonis vernalis</i> Spring Adonis	1	
<i>Aesculus hippocastanum</i> Horse Chestnut	1	
<i>Alchornea floribunda</i> Niando	1	
<i>Alisma plantago-aquatica</i> Ze-Xie; Tse-Hsieh; Water Plantain; Mud Plantain	2	
<i>Allium sativum</i> var. <i>sativum</i> Garlic	1	
<i>Allium cepa</i> Shallot; Onion	2	1660.648
<i>Aloe vera</i> Bitter Aloes; Aloe	1	
<i>Althaea officinalis</i> Marshmallow; White Mallow	2	
<i>Amorphophallus konjac</i> Elephant Yam; Snake Palm; Konjac; Devil's Tongue; Leopard Palm; Umbrella Arum	1	
<i>Anastatica hierochuntica</i> Jericho Rose	1	
<i>Angelica sinensis</i> Chinese Angelica; Dang Gui; Dong Quai; Dang Qui; Dang Quai; Dong Gui	1	4940.0
<i>Apium graveolens</i> Celery	2	
<i>Arachis hypogaea</i> Groundnut; Peanut	2	14000.0
<i>Areca catechu</i> Betel Nut; Pin-Lang	2	2000.0
<i>Arnica montana</i> Leopard's-Bane; Mountain Tobacco	1	
<i>Artemisia vulgaris</i> Mugwort	1	
<i>Artemisia cina</i> Levant Wormseed	2	
<i>Artemisia abrotanum</i> Southernwood	1	
<i>Asclepias syriaca</i> Milkweed	1	
<i>Asparagus officinalis</i> Asparagus	2	1.2
<i>Aspidosperma quebracho-blanco</i> Quebracho	1	
<i>Astragalus membranaceus</i> Huang Qi; Huang-Chi	1	
<i>Atropa bella-donna</i> Belladonna	2	
<i>Avena sativa</i> Oats	1	3485.5
<i>Bacopa monnieri</i> Water Hyssop; Brahmi	1	
<i>Ballota nigra</i> Black Horehound	1	
<i>Belamcanda chinensis</i> Maravilla (Sp.); Leopard Lily; Mariposa (Sp.); Iris Tigre (Fr.); Leopardenblume (Ger.); Blackberry Lily; Shenan	2	
<i>Bertholletia excelsa</i> Creamnut; Brazilnut; Brazilnut-Tree; Paranut	1	210000.0
<i>Beta vulgaris</i> Garden Beet; Beetroot; Sugar Beet; Beet	1	1.2
<i>Borago officinalis</i> Talewort; Beebread; Borage; Beeplant	1	
<i>Brassica pekinensis</i> Chinese Cabbage	1	1.68
<i>Brassica oleracea</i> var. <i>capitata</i> l. Red Cabbage; White Cabbage; Cabbage	2	2.8
<i>Canavalia ensiformis</i> Jack Bean	1	
<i>Capparis spinosa</i> Caper; Caperbush	1	940.0
<i>Capsella bursa-pastoris</i> Shepherd's Purse	1	20000.0

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<i>Capsicum frutescens</i> Tabasco; Cayenne; Hot Pepper; Chili; Spur Pepper; Red Chili	1	
<i>Capsicum annuum</i> Cherry Pepper; Green Pepper; Bell Pepper; Cone Pepper; Paprika; Sweet Pepper	2	1314.8
<i>Carica papaya</i> Papaya	2	
<i>Carya ovata</i> Shagbark Hickory	2	10023.4
<i>Carya glabra</i> Pignut Hickory	1	13.2
<i>Catharanthus roseus</i> Madagascar Periwinkle; Rosy Periwinkle	2	
<i>Catharanthus lanceus</i> Lanceleaf Periwinkle	1	100000.0
<i>Centaurea calcitrapa</i> Star-Thistle	1	
<i>Cephaelis ipecacuanha</i> Raicilla; Ipecac	1	
<i>Chamaemelum nobile</i> Garden Camomile; Perennial Camomile; Roman Camomile	1	
<i>Chamissoa altissima</i> Guanique	1	
<i>Chelidonium majus</i> Celandine	1	
<i>Chrysanthemum x morifolium</i> Chrysanthemum; Florist's Chrysanthemum; Ju Hua (Pinyin); Mum	1	
<i>Chrysanthemum cinerariifolium</i> Pyrethrum	1	
<i>Cichorium intybus</i> Witloof; Chicory; Succory	1	
<i>Cichorium endivia</i> Escarole; Endive	1	1.92
<i>Citrus sinensis</i> Orange	3	323.08
<i>Citrus reticulata</i> Tangerine; Mandarin	1	
<i>Citrus paradisi</i> Grapefruit	1	4.62
<i>Citrus limon</i> Lemon	1	
<i>Citrus aurantium</i> Petitgrain; Bitter Orange	1	
<i>Coffea arabica</i> Coffee	1	600.0
<i>Convallaria majalis</i> Lily-Of-The-Valley	1	
<i>Coriandrum sativum</i> Coriander; Chinese Parsley; Cilantro	1	
<i>Crataegus</i> sp.	1	
<i>Crataegus rhipidophylla</i> Hawthorn	1	
<i>Crataegus monogyna</i> English Hawthorn; Hawthorn	1	
<i>Crataegus laevigata</i> Hawthorn; Whitethorn; Woodland Hawthorn; English Hawthorn	1	
<i>Croton linearis</i>	1	
<i>Cucumis sativus</i> Cucumber	1	1.12
<i>Cucumis melo</i> Nutmeg Melon; Persian Melon; Muskmelon; Cantaloupe; Netted Melon; Melon	1	0.88
<i>Cucurbita pepo</i> Pumpkin	1	8000.0
<i>Cuminum cyminum</i> Cumin	1	
<i>Datura stramonium</i> Jimsonweed	1	
<i>Daucus carota</i> Carrot	3	219.2
<i>Dictamnus albus</i> Akgiritotu; Gazelotu; Burning Bush; Dittany; Gas Plant	1	
<i>Digitalis purpurea</i> Purple Foxglove	1	
<i>Digitalis lanata</i> Grecian Foxglove	1	2000.0
<i>Duboisia myoporoides</i> Corkwood Tree; Pituri	1	
<i>Elettaria cardamomum</i> Cardamom	1	
<i>Equisetum arvense</i> Horsetail; Field Horsetail	1	0.8
<i>Erythroxylum coca</i> Coca	1	

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<i>Euphorbia hirta</i> Queensland Asthma Herb	1	
<i>Euphrasia officinalis</i> Eyebright	1	
<i>Foeniculum vulgare</i> Fennel	1	
<i>Fragaria</i> spp Strawberry	1	1240.0
<i>Galanthus nivalis</i> Snowdrop	1	
<i>Galega officinalis</i> Galega; Goat's Rue	1	
<i>Ganoderma lucidum</i> Ling Zhi; Reishi	1	
<i>Ginkgo biloba</i> Maidenhair Tree; Ginkgo	1	
<i>Glechoma hederacea</i> Alehoof	1	
<i>Gloriosa superba</i> Glory Lily	1	
<i>Glycine max</i> Soybean	2	52492.49
<i>Glycyrrhiza glabra</i> Licorice; Commom Licorice; Smooth Licorice; Licorice-Root	1	
<i>Gossypium</i> sp Cotton	1	
<i>Gymnema sylvestre</i> Gymnema; Miracle Fruit	1	
<i>Hamamelis virginiana</i> Witch Hazel	1	4000.0
<i>Helianthus tuberosus</i> Jerusalem Artichoke	1	
<i>Helianthus annuus</i> Girasol; Sunflower	2	7000.0
<i>Hippeastrum vittatum</i> Barbados lily	1	
<i>Hippomane mancinella</i> Manchineel	1	400.0
<i>Hordeum vulgare</i> Barley; Barleygrass	1	3234.0
<i>Humulus lupulus</i> Hops	1	
<i>Huperzia</i> spp Cutleaf Clubmoss	1	
<i>Hyoscyamus niger</i> Henbane	1	
<i>Hypericum perforatum</i> Goatweed; Hypericum; Klamath Weed; St. John's-wort; Common St. Johnswort	1	
<i>Hyssopus officinalis</i> Hyssop	1	
<i>Ilex paraguariensis</i> Paraguay Tea; Mate; South American Holly	1	
<i>Iris x germanica</i> Orris	2	
<i>Iris versicolor</i> Blue Flag	1	
<i>Juglans regia</i> English Walnut	2	
<i>Juniperus virginiana</i> Red Cedar	1	0.704
<i>Juniperus macropoda</i> Indian Juniper; Himalayan Juniper	2	
<i>Lactuca sativa</i> Lettuce	2	5.2
<i>Lagenaria siceraria</i> Calabash Gourd; White-Flowered Gourd	1	32040.0
<i>Lens culinaris</i> Lentil	1	4460.0
<i>Leonurus cardiaca</i> Motherwort	1	
<i>Linum usitatissimum</i> Flax; Linseed	3	19960.0
<i>Lippia javanica</i> Lemon Bush; Umsuzwane (Zulu)	1	
<i>Luffa aegyptiaca</i> Smooth Loofah; Luffa; Vegetable Sponge	1	4180.0
<i>Lupinus albus</i> White Lupine	1	
<i>Lycium chinense</i> Wolfberry; Spina Santa Cinese (Ital.); Chinese Boxthorn; Gou Qi (Chin.); Kaukichai (Malays.); Chinese Wolfberry; Lyciet de Chine (Fr.); Chinese Matrimony Vine; Chinesischer Bocksdoorn (Ger.); Daun Koki (Indones.); Kuko (Jap.)	1	
<i>Lycium chilense</i> Chilean Wolfberry	1	

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<i>Lycium barbarum</i> Barbary Matrimony Vine; Matrimony Vine; Ning Xia Gou Qi (Chin.); Common Matrimony Vine; Duke of Argyll's Eta Tree	1	
<i>Lycopersicon esculentum</i> Tomato	2	169.36
<i>Lycopodium lucidulum</i> Shining Clubmoss	1	
<i>Lycopodium clavatum</i> Antler Herb; Clubmoss	1	
<i>Lycoris squamigera</i> Resurrection Lily; Magic Lily	1	
<i>Lycoris radiata</i> Spider Lily	1	
<i>Malus domestica</i> Apple	2	0.344
<i>Malva neglecta</i> Cheeses; Common Mallow	1	
<i>Marrubium vulgare</i> Horehound; White Horehound	1	22000.0
<i>Matricaria recutita</i> Annual Camomile; German Camomile; Wild Camomile	1	
<i>Medicago sativa</i> Alfalfa; Lucerne	1	
<i>Mentha x piperita</i> Peppermint	1	
<i>Menyanthes trifoliata</i> Bog Myrtle; Bogbean; Buckbean; Marsh Trefoil; Marsh Clover; Water Trefoil	1	
<i>Moringa oleifera</i> Ben Nut; West Indian Ben; Benzolive Tree; Moringa; Drumstick Tree; Horseradish Tree; Jacinto (Sp.)	1	
<i>Morus alba</i> White Mulberry; Sang-Pai-Pi	1	
<i>Mucuna pruriens</i> Cowage; Velvetbean	3	200000.0
<i>Narcissus tazetta</i> Daffodil	1	
<i>Nelumbo nucifera</i> Water Lotus	1	
<i>Nerium oleander</i> Oleander	1	
<i>Nicotiana tabacum</i> Tobacco	1	80000.0
<i>Nicotiana rustica</i> Aztec Tobacco	1	
<i>Nicotiana glauca</i> Tree Tobacco	1	
<i>Olea europaea</i> Olive	1	
<i>Oryza sativa</i> Rice	2	1760.0
<i>Pachyrhizus erosus</i> Yambean	1	
<i>Panax quinquefolius</i> Ginseng; American Ginseng	1	4000.0
<i>Panax ginseng</i> Chinese Ginseng; Ginseng; Oriental Ginseng; Korean Ginseng	1	4000.0
<i>Pancratium maritimum</i> Sea Daffodil	1	
<i>Papaver somniferum</i> Opium Poppy; Poppyseed Poppy	2	56000.0
<i>Paullinia cupana</i> Guarana	1	
<i>Pausinystalia johimbe</i> Yohimbe	1	
<i>Peganum harmala</i> Harmel; Syrian Rue	2	
<i>Persea americana</i> Avocado	1	
<i>Petasites hybridus</i> European Butterbur	1	
<i>Petroselinum crispum</i> Parsley	1	1.584
<i>Peumus boldus</i> Boldo	2	
<i>Phaseolus vulgaris</i> Pop Bean; Kidney Bean; Green Bean; String Bean; Dwarf Bean; Snap Bean; Black Bean; Wax Bean; Haricot; Garden Bean; Popping Bean; Haricot Vert; Haricot Bean; French Bean; Field Bean; Flageolet Bean; Navy Bean	2	10.3
<i>Phaseolus lunatus</i> Lima Bean; Butter Bean	1	
<i>Physostigma venenosum</i> Calabar Bean	1	
<i>Pilocarpus racemosus</i> Guadalupe Jaborandi	1	8000.0
<i>Pilocarpus pennatifolius</i> Paraguay Jaborandi	1	8000.0

Plant	# Chemicals	Total PPM
<i>Pilocarpus microphyllus</i> Maranhao Jaborandi	1	20000.0
<i>Pilocarpus jaborandi</i> Pernambuco Jaborandi; Indian Hemp	1	20000.0
<i>Pimpinella anisum</i> Anise; Sweet Cumin	1	
<i>Pinellia ternata</i> Pan-Hsia; Ban-Xia	1	
<i>Pinus sylvestris</i> Scotch Pine	1	6800.0
<i>Pinus echinata</i> Shortleaf Pine	1	0.84
<i>Piper nigrum</i> Pepper; Black Pepper; White Pepper	1	
<i>Piper betel</i> Betel Pepper	1	
<i>Pistacia lentiscus</i> Mastixbaum (Ger.); Chios Mastictree; Mastic; Mastictree; Lentisco (Sp.)	1	
<i>Pisum sativum</i> Pea	2	10084.0
<i>Plantago major</i> Common Plantain	1	
<i>Plantago asiatica</i> Asian Plantain	1	
<i>Polygonum multiflorum</i> Chinese Knotweed; He Shou Wu; Chinese Cornbind; Fleeceflower; Fo Ti	1	
<i>Prunus serotina</i> Black Cherry; Wild Cherry	1	
<i>Prunus persica</i> Peach	1	1.2
<i>Prunus domestica</i> Plum	2	3001.36
<i>Pueraria montana</i> Kudsu; Kudzu	1	
<i>Pyrus communis</i> Pear	1	0.37
<i>Quercus velutina</i> Black Oak	1	10.4
<i>Quercus rubra</i> Northern Red Oak	1	7.92
<i>Quercus alba</i> White Oak	1	9.88
<i>Rauvolfia vomitoria</i> African Snakeroot	1	
<i>Rauvolfia serpentina</i> Serpentine Wood; Indian Snakeroot	1	
<i>Rhizophora mangle</i> Red Mangrove	1	
<i>Ricinus communis</i> Castorbean	1	
<i>Rosa canina</i> Dog Rose; Dogbrier; Rose	1	
<i>Sambucus nigra</i> European Elder; Black Elder; European Alder; European Elderberry; Elder	1	
<i>Satureja montana</i> Savory; Winter Savory	1	
<i>Sesamum indicum</i> Ajonjoli (Sp.); Benneseed; Sesamo (Sp.); Sesame; Beni	2	3430.0
<i>Sinapis alba</i> White Mustard	1	
<i>Solanum tuberosum</i> Potato	3	2000.56
<i>Solanum melongena</i> Eggplant; Aubergine	2	1040.64
<i>Sorbus aucubaria</i> Rowan Berry	1	
<i>Spinacia oleracea</i> Spinach	1	
<i>Stachys officinalis</i> Bishop's-Wort; Purple Betony; Wood Betony; Betony	1	
<i>Strophanthus hispidus</i> Hispid Ouabain	1	
<i>Strophanthus gratus</i> Ouabain	1	
<i>Strychnos nux-vomica</i> Nux-Vomica; Strychnine	1	
<i>Symphoricarpos orbiculatus</i> Buckbush	1	2.12
<i>Symphytum officinale</i> Comfrey	1	
<i>Syzygium cumini</i> Jambolan; Java Plum; Aceituna Dulce	1	
<i>Taraxacum officinale</i> Dandelion	2	59400.0

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<i>Taraxacum mongolicum</i> Mongoloid Dandelion	1	
<i>Teucrium scordium</i> Water Germander	1	
<i>Teucrium montanum</i> Mountain Germander	1	
<i>Teucrium chamaedrys</i> Wall Germander	1	
<i>Teucrium botrys</i> Field Germander	1	
<i>Theobroma cacao</i> Cacao	1	
<i>Thymus vulgaris</i> Thyme; Garden Thyme; Common Thyme	1	8.0
<i>Trifolium pratense</i> Purple Clover; Peavine Clover; Cowgrass; Red Clover	1	
<i>Trigonella foenum-graecum</i> Fenugreek; Greek Hay; Bockshornklee (Ger.); Alholva (Sp.); Greek Clover	2	28000.0
<i>Triticum aestivum</i> Wheat	2	3938.0
<i>Tussilago farfara</i> Coltsfoot	1	
<i>Urtica dioica</i> European Nettle; Stinging Nettle	2	
<i>Valeriana officinalis</i> Common Valerian; Valerian; Garden-Heliotrope	1	
<i>Vicia faba</i> Habas; Broadbean; Faba Bean	1	680.0
<i>Vigna unguiculata</i> Yardlong Bean; Asparagus Bean; Pea Bean	1	4040.0
<i>Vigna radiata</i> Mungbean; Green Gram	1	3712.0
<i>Vigna mungo</i> Black Gram	2	36120.0
<i>Vitis vinifera</i> Grape; Vid (Sp.); Grapevine; Vigne Vinifere (Fr.); Weinrebe (Ger.); European Grape; Wine Grape; Parra (Sp.)	2	0.616
<i>Withania somnifera</i> Ashwagandha	2	
<i>Zea mays</i> Corn	2	1102.44
<i>Zingiber officinale</i> Ginger	1	