Monograph #6

Angelica

Herbal Information:
Family — Umbelliferae
Species — Angelica archangelica (European Angelica) | Angelica sinensis or polymorpha (Chinese angelica, Dong Quai) | Angelica acutiloba (Japanese angelica) | Angelica atropurpurea (America angelica) | Angelica sylvestris (Wild angelica)

Brief Description of plant: This lovely herb of North Europe and Central Asia is a three-year plant. Meaning that it will produce an abundant taproot, its distinctive divided leaves and stem functions plus in the third year a crown of green-white flowers which will seed and then…it dies.

Use: All parts of this herb are useful and due to the life span of the herb and the potency of its oil, the essential oils of this plant are astronomically priced against such standards as Sandalwood. The leaves can be stewed with an acidic fruit, while the stems be treated as salad greens, the shoots and root are eaten as vegetables and the seeds can be found in pastries. The seeds and root are distilled in gin, vermouth, and perfumes. A root incision in the spring gives latex, used as a fixative. Homeopathically the roots, seeds, and leaves treat colds, indigestion, and rheumatism. The roots are also a stimulant for the uterus and the liver. Aromatically the odor is said to relieve travel sickness as well.

Generalized Description: The many species of Angelica are biennial or perennial plants with hollow stems that rise to a height of 3 to 7 feet. The umbrels or crown of the flowers bloom between May and August. One can find the plants in damp mountain ravines and meadows, as well as riverbanks, coastal areas and is cultivated in hot house conditions and farms. In the United States and Europe angelica is cultivated for the esoteric use of food flavourings and use in making various alcoholic products such as bitters, liqueurs, and vermouths. In Asia it is used of course for medicinal action. The roots and rhizomes of the plant are the most prized by those who cultivate the herb for its medicinal properties. The key uses of the herb include such as treatment of Menopause, Premenstrual syndrome, Allergies, and can smooth out muscle spasms. Historically speaking the American and European varieties have properties different from the Asian.

Chemical Composition: a) Angelica sinensis and acutiloba — The Chinese and Japanese varieties are both composed of various coumarins, essential oils, and flavonoids, which are responsible for their medicinal actions. The oil of oriental angelica contains n-butylphthalide, cadinene, carvacrol, n-dodecanal, isosafrole, linoleic acid, palmitic acid, safrole, sesquiterpene, and n-tetradecanol. b) Angelica archangelica — Also very rich in coumarins, Angelica archangelica is particularly phototoxic (causes severe burn). Coumarins, including osthole, angelicin, osthelen, umbelliferone, archangelicine, bergapten, and ostruthol, are found in significant concentrations, with osthole composing nearly 0.2 percent of the root. The root is also a good source of flavonoids, including archangelenone and caffeic acids. The root

contains 0.3 to 1.0 percent volatile oil (which is composed mainly of beta-phellandrene), alpha-pinene, borneol, limonene, and four macrocyclic lactones.

**Historical / Folk Uses:** The reputation of Angelica, in Asia, is second to that of ginseng. It is predominantly used for female problems. Such conditions are favourably treated, conditions such as dysmenorrhea, amenorrhea, and metrorrhagia (painful, absence of, and abnormal menstruation) and the hot flashes of menopause. In the old herbal texts, archangelica was used, in Europe, for protection from contagion, for purifying the blood, and curing every conceivable malady; it was considered a sovereign remedy for poisons, agues, and all infectious maladies.

Archangelica has been written about in one legend, as a cure for the plague. One explanation for the name is related to its blooming near the feast day of St. Michael the Archangel. It was seen as a protectorant against evil spirits and witchcraft.

Archangelica has been used for a variety of conditions, including flatulent dyspepsia, pleurisy, respiratory catarrh, and bronchitis. The plant was believed to possess carminative, spasmodic, diaphoretic, expectorant, and diuretic activity.

**Pharmacology:** [This data is courtesy of the book, *The Healing Power of Herbs* by Dr. Michael T. Murray N.D., pages 46—48.] The pharamcology of *Angelica* species relates to their high coumarin content. However, unlike other scientific investigations of herbal medicines, much of the research done on *Angelica* species has been done on plant extracts, rather than isolated constituents. The overwhelming majority of the studies have been done on the Asian species. Some of the pharmacological activities demonstrated include phytoestrogen activity, analgesic activity, cardiovascular effects, smooth muscle relaxing effects, anti-allergy and immunomodulating activity, and antibacterial activity.

**Phytoestrogen effects**

Plant estrogen type essences, or phytoestrogens, are components of many medicinal herbs historically used to treat conditions now treated with synthetic estrogens. Chinese and Japanese angelicas contain highly active phytoestrogen, although these compounds are much lower in activity than animal estrogens (1:400 as active). This can help to explain why angelica is used to treat conditions characterized by both high and low estrogen levels. Phytoestrogens demonstrate an alterative effect by competing with estrogen for binding sites on cells. When estrogen levels are low, phytoestrogens exert some estrogenic activity; when estrogen levels are high, phytoestrogens reduce overall estrogenic activity by occupying estrogen receptor sites. This alterative action in amenorrhea and menopause.

Japanese angelica has demonstrated uterine tonic activity, causing an initial increase in uterine contraction followed by relaxation.

**Cardiovascular effects**

While this herb is not specified for these purposes, *angelica* possesses an agent, which can significantly lower blood pressure. This effect is due to the ability of the herb to dilate the blood vessels. The two coumarins, dihydropyranocoumarins and dihydromfurancoumarins from plants such as *Angelica* have been shown to be able to cause the coronary vessels to dilate and relieve the condition, vasospasms.

**Relaxation of musculator activity**

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3 Ibid.
8 See footnotes 1, 2, & 6.
Calcium channel-blocking compounds are also capable of relaxing the smooth muscles of visceral organs. Angelica (essential oil) relaxes the smooth muscles of the intestines and uterus, whereas the water extract produces an initial contraction and then prolonged relaxation. 10

**Analgesic Properties**

In studies in China and Japan the herb, angelica has demonstrated an analgesic effect in experimental studies. 11 12 13 Its analgesic activity, combined with its smooth muscle-relaxing activity, supports its historical use in such conditions as uterine cramps, trauma, headaches, and arthritis. 14

**Antiallergic and immune-modulating activity**

Its action is related to its ability to inhibit selectively the production of allergy-related antibodies (IgE). Because IgE levels in patients with allergic conditions are typically three to ten times greater than is considered normal, angelica may offer some benefit by reducing these elevated antibody levels. 15 Coumarins have been shown to stimulate white blood cells and increase their ability to destroy foreign particles and cancer cells. 16 On coumarin administration, specific white blood cells known as macrophages are said to be "activated" and thus capable of entering the tumor, where they can destroy tumor cells. 17 18

**Dosage Information**

Three times a day:
- Powdered root or as a tea: 1 to 2 grams
- Tincture (1:5): 4 milliliters (1 teaspoon)
- Fluid Extract: 1 milliliter (¼ teaspoon)

**Toxicity**

Angelica is of low toxicity; it can react with sunlight and cause rash or severe sunburn. This possible side effect should be kept in mind when using. This side effect can be used therapeutically in the treatment of vitiligo and psoriasis. 19

**Web Links for Further Information**

1. [http://www.planetbotanic.com/angelica.htm](http://www.planetbotanic.com/angelica.htm)
4. [http://homepages.which.net/~ks.burrell/f2/Angelica_Herb.htm](http://homepages.which.net/~ks.burrell/f2/Angelica_Herb.htm)
5. [http://www.botanical.com/botanical/mgmh/a/anegl037.html](http://www.botanical.com/botanical/mgmh/a/anegl037.html)

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10 See footnotes 1, 6, & 7.
11 See footnotes 1 & 6.
15 Ibid.
17 Ibid.
19 See footnote 14, page 48—49.