

2005-3778

LB/CPH

6/15/05

There are 2 separate new dietary ingredients filing in this package, please process accordingly.

1. Toona Sinensis
2. Heracleum Lanatum

If you have any question, please contact me at:

Leonard Lee  
31855 Date Palm Dr. Suite 153  
Cathedral City, Ca. 92234  
Tel: 951-845-7124

Thank you very much and our best regards!



New dietary Ingredient Pre-market Notification for:

JUN 23  
EDA / dB

## *Heracleum lanatum* (Michx.)

2005-3718

|                     |  |                                       |              |
|---------------------|--|---------------------------------------|--------------|
| Person submitted:   | Leonard Y Lee Tel. 951-845-7124  |                                       |              |
| Address:            | 31855 Date Palm Dr #153 Cathedral City Ca. 92234   |                                       |              |
| Common name:        | Cow parsnip  | Content 30% of tablet, in powder form | Umbelliferae |
| Author:             | (Schleich. ex Gaudin )<br>Briq.  | Botanical references                  | 71, 200      |
| Synonyms:           | Heracleum maximum (W.Bartram ), Heracleum lanatum (Michx.),<br>Heracleum cordatum  |                                       |              |
| Other Common Names: | From various places around the Web, may not be correct. See <u>below</u> .<br>American Cow Parsnip, American Cow-par snip, Common Cowparsnip, Cow Parsnip, Parsnip, Cow, |                                       |              |
| Other Range Info:   | From the <u>Ethnobotany Database</u><br>Canada(Kwakiutl); Canada(Salish), Us, Us(Amerindian),<br>Us(Blackfoot), Us(Flathead); Us(Nm)                                     |                                       |              |

## Physical Characteristics

Perennial growing to 2.4m. It is hardy to zone 5 and is not frost tender. It is in flower in July, and the seeds ripen in August. The flowers are hermaphrodite (have both male and female organs) and are pollinated by Insects. The plant is self-fertile. We rate it 3 out of 5 for usefulness.

## Edible Uses

*Condiment; Flowers; Leaves; Root; Salt; Stem.*

Root - cooked. Tastes like a swede. Used like potatoes, though it is considered to be poisonous by some writers, please see note on furarocoumarins (psoralen) below.

The peeled stem can be eaten raw but is best cooked. The unpeeled stem can be used when young, or just the inner tissue of older stems can be used, before the plants flower. For people not used to the flavour, they are best cooked in two changes of water when they make a tasty celery-like vegetable. Another report says that, despite the strong odour of the leaves and outer skin, the peeled young stems are mild and sweet, resembling celery in flavour. The stems cannot be eaten raw in large quantities because they give a

burning sensation in the mouth. The stems are highly nutritious, containing up to 18% protein.

Leaves and young shoots - raw or cooked Cooked as greens or added to salads.

Young flowers. No further details

The dried seeds are used as a flavouring for soups, stews and potato salads.

The dried base of the plant and ashes from the burnt leaves are used as a salt substitute.

## Medicinal Uses

*Antidandruff; Antirheumatic; Antispasmodic; Carminative; Febrifuge; Odontalgic; Stimulant; TB; Tonic.*

*Heracleum lanatum* has been widely used both in US and Chinese traditional herbal medicine for century ( Name in Chinese Character 白芷 ), the dry roots are readily available in every Chinese herbal medicine shops in The U S

Cow parsnip was also widely employed medicinally by a large number of native North American Indian tribes who used it to treat a wide variety of complaints, but especially as a poultice on bruises, sores etc

All parts of the plant are antirheumatic, antispasmodic, carminative, febrifuge, odontalgic and stimulant.

The leaves are tonic. They have been used in the treatment of colds A soothing drink made from the leaves is used to treat sore throats A poultice of the heated leaves has been applied to minor cuts, sore muscles etc

An infusion of the fresh young stems has been used in the treatment of diarrhoea. It has also been used as a wash to remove warts.

The plant has been used in the treatment of epilepsy

A tea made from the roots is used in the treatment of indigestion, colds, stomach cramps, rheumatism, sore throats, TB etc Externally, the root is used as a poultice on sores, bruises, swellings, boils, rheumatic joints, VD scabs etc, whilst a bit of root has been held on an aching tooth to reduce the pain The root can be crushed, mixed with water and used as an antidandruff hair wash.

The root contains psoralen, which is being investigated for its use in the treatment of psoriasis, leukaemia and AID.

The seed has been used to treat severe headaches

**Furanocoumarins (psoralen)** can be found on *heracleum lanatum*, many citrus fruit, carrots, parsley and celery. The purpose of it is to discourage insects and animal from consuming it during its growing process, thereby its contents in roots reduced as the plant and fruit maturing.

Plants containing furanocoumarins have been used since ancient times by many popular medicines for the treatment of vitiligo. Such proofs can be found as far back as 1500 BC in an indian sacred book of ayurvedic medicine. This book, Atharva Veda, described the use of ground seeds of a native plant (*Psoralea corylifolia*, Fitzpatrick and Pathak., 1959). It is also well-known that traditional egyptian medicine has been using *Ammi majus* extracts for centuries for the same skin disorder. In western countries, the first reference to plant furanocoumarins is probably found in a German tale from the XVIII th century, where a small boy « little Muck » suffered a photodermatitis after he ate figs (Scott et al., 1976)

Although they have been traditionally used by folkloric medicines, the rebirth of these molecules in modern science is just 50 years old. A first important step was realised by Kalbrunner, who succeeded in isolating bergapten (5-methoxy-psoralen) from bergamot oil in 1834 (Fowlks, 1959) However, the real discovery of the potentialities of these substances was achieved in 1938 by Kuske He clearly stated that furanocoumarins were the chemical agents responsible for plant photodermatitis.

As naturally-occurring substances, furanocoumarins have been frequently investigated in plants, because of their photosensitizing properties. During the last 50 years, these molecules have been mainly described in 4 plant families that are Rutaceae, Moraceae, Apiaceae and Leguminosae

## Other Uses

*Dye; Musical; Packing; Repellent; Straw.*

An infusion of the blossoms, rubbed on the body, repels flies and mosquitoes.

Please refer to U.S. Patent # 5,741,491 which use *Heracleum Lanatum* as a major ingredient in its treatment of diabetes (Article enclosed)

## Web References

- [Links, Photos, Suppliers](#) from [Hortiplex Plant Database](#)
- **Furanocoumarin content in plants** [http //www.ensaia.u-nancy.fr/lae/Equipe/MetII/Researchtopicmetsec/Furoc3.htm](http://www.ensaia.u-nancy.fr/lae/Equipe/MetII/Researchtopicmetsec/Furoc3.htm)

References for *Heracleum lanatum* (a possible synonym)

- Details of Scandanavian and European Common names in Henriette's names database
- Taxon data from the CalFlora database.

References for *Heracleum maximum* (a possible synonym).

- Details of Scandanavian and European Common names in Henriette's names database Data (Latin & Common names, other references) from the BONAP's Synonymized Checklist of the Vascular Flora of the United States, Puerto Rico, and the Virgin Islands
- Data (uses, distribution, wetland) from the UDSA's plants database
- Images from the Vascular Plant Image Gallery of the Texas A&M Bioinformatics Working Group

## References

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- [2] **Hedrick. U. P.** *Sturtevant's Edible Plants of the World.* Dover Publications 1972 ISBN 0-486-20459-6
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ISBN 0-7748-0533-1

[257] **Moerman. D.** *Native American Ethnobotany* Timber Press. Oregon 1998 ISBN 0-88192-453-9

## Reference for Furanocoumarins research

Berembaun M.R., Zangerl A R , Nitao J K (1984) Furanocoumarins in seeds of wild and cultivated parsnip. *Phytochemistry* 23, 1809-1810

Ceska O., Chaudhary S K., Warrington P.J., Ashwood-Smith M.T. (1986)  
Furanocoumarins in the cultivated carrot, *Daucus carota*. *Phytochemistry*, 25, 81-83

Chaudhary S K , Ceska O , Warrington P J , Ashwood-Smith M.J. (1985) Increased furanocoumarin content of celery during storage *J Agric. Food Chem.*, 33, 1153-1157

Chaudhary S.K., Ceska O., Tetu C , Warrington P J., Ashwood-Smith M.T., Poulton G A (1986). Oxypeucedanin, a major furanocoumarin in parsley, *Petroselinum crispum* *Planta Medica* 6, 462-464.

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Nakaoki T , Morita N. (1953) Constituent of the fruit of *Fagara* species of Japan. *J Pharm Soc. Japan* 73, 770

Other supporting documents included in this submission

- Studies on cancer chemoprevention by traditional folk medicines XXIV Inhibitory effect of a coumarin derivative, 7-isopentenylcoumarin, against tumor-promotion *Biol Pharm Bull* Feb 2002; 25 (2) 244-6
- Antifungal screening of medicine plants of British Columbian native people *Journal ethnopharmacol* Dec 1994, 44 (3) 157-69, University of British Columbia.
- U S Patent # 5,741,491 which uses *Heracleum Lanatum* as a major ingredient in it's treatment of Diabetes

U.S. Patent copy