Native to Eastern Europe, Ukraine and Russia. Herbaceous, Hardy perennial with large (≥ 50 cm long) basal leaves with thick petioles, forming a rosette near the ground. Leaves are unusual in that, two, quite different; leaf forms can appear on the same plant. Some are scalloped, wavy, lanceolate leaves, while others can be very deeply cut. Midribs beneath leaves are very raised. Flower stems rise higher than leaves. Clusters of small, 4-petaled, white flowers set at the stem terminals. Most cultivars produce sterile seeds.

Cultivation:
Horseradish is hardy up to Maine (zone 5) and thrives in full sun. Although it can withstand some drought, horseradish is happiest in moist but not continually wet average garden loam with a pH near 6.5. As a landscaping plant it’s used to define the edges of borders. As seeds are rarely viable, horseradish is generally propagated by root cuttings and crown division. Grow near other plants for insect repellent. Root infusion can be sprayed on apple trees against brown rot.

Harvest:
Roots are at their peak flavor and pungency after the first killing frost, but can also be harvested in the early spring before plant growth, or as needed throughout the season. Store the roots in a cool, dark location to avoid spoilage, darkening color and loss of flavor. They can be buried in a layer of moist sand root cellars or in ventilated plastic bags in the refrigerator.

Medicine Preparation:
Prepared with fresh root or fresh cut & dried (Once crushed (grated) the pungent properties begin to dissipate) Fresh succus (juice), Infusion or mixed in food. Preserved in saltwater brine ferment, vinegar, wine, brandy, alcohol, electuary, syrup (prepare syrup with a strong infusion, steeping horseradish for 2 hours. After straining, add equal part of sugar and liquid to thicken). Topically as Plaster; but not directly on skin as it will burn prepare in same manner to mustard plaster with cloth between herb and skin. In liniments.

Major Constituents:
Glycosides/ glucosinolates: sinigrin, gluconasturtii, isothiocyanates: allyl and butyl, enzyme peroxidase (HRP)

Cultural Traditions and Uses
Horseradish has been valued as food and medicine since the time of the Ancients. Records show that horseradish was used in Egyptian medicine as far back as 1500 BC. The ancient Greeks and Romans also cultivated this herb for medicinal uses. In Greek mythology the Delphic told Apollo that horseradish had a value measured as equal to its weight in gold. Theophrastus mentioned the roots as being a diuretic, and named many varieties. Dioscorides praised it for intestinal disorders, as a digestion stimulant, and advised it to be eaten with fatty meat dishes by stout people. Records show Cato acknowledged the plant in discussions in his writings on agriculture and a horseradish plant appears in a mural in Pompeii. Galen found it a good diuretic and emmenagogue, recommending it for women suffering from menstrual problems such as amenorrhea and fluid retention.
While the plant reference is not clear it generally understood that Pliny the Elder recommended its use for various medicinal qualities in his ‘Natural History’, as both the leaves and root of the plant were popular during the Middle Ages for medicinal purposes. The leaves were used to for a yellow dye.

Horseradish also has a place in Nordic mythology and shamanic /magical traditions. The feared fire giants (jotuns) of Muspellheim highly valued horseradish and the plant was used to protect you from an attack by the jotuns and propitiate them if you share some. The rune Cweorth was carved into the root to make an offering. Grated horseradish root is sprinkled around homes for protection.

Between 1000-1300 AD young horseradish leaves began to be incorporated into the Passover Seder as one of the maror, or five bitter herbs, to be used by the Jewish people.

In 1567, Jean Wien of Basle’s book on therapeutic plants, Medicarum, recommended armoracia to preventing scurvy. Horseradish root is also a common meal condiment in Germany, Scandinavia and Britain and was introduced to North America early during the colonization of Europe.

Both Presidents George Washington and Thomas Jefferson grew horseradish in their gardens, and the plant was commonplace in early American gardens. In the Midwest, hardy varieties were obtained through plant selection and grown easily. By the mid-1800s, immigrants living in NE Illinois began growing horseradish for market, and today a great portion of horseradish is still grown in the area. Collinsville, Illinois refers to itself as “the horseradish capital of the world”, and hosts an international Horseradish festival each year on the first weekend of June. Horseradish is also grown commercially throughout the US, Canada and Europe.

**Horseradish as Medicine - Outline of Herbal Uses & Indications:**

**Tissue State**: Stagnation, depression, torpor

**Taste**: Pungent, hot, bitter

**Actions**: Stimulant, pungent mucilage (a rare combination), stimulating diaphoretic, GI stimulant, diuretic, emmenagogue, vermifuge, anti-rheumatic, analgesic, rubefacient, immune stimulant, anti-cancer

**Doses**: Traditional use was 20 g/day of fresh root for colds and respiratory infections. Fresh root 2 to 4 g before meals. Infusion several times per day. 1-2 Tbsp syrup, wine, brandy, tincture diluted before meals.

**Specific indications:**

- **Cold, depressed and stagnant conditions**: a powerful stimulant to movement in the body.
- **Sinus congestion and sinusitis**: moves congestion but is also is mucilaginous
- **Colds and respiratory infections**: up to 20 g/day of fresh root in various preparations.
- **Respiratory ailments and congestion such as asthma and bronchitis & respiratory ailments related to allergies, such as hayfever**: cuts mucus and stimulate elimination. Use as an infusion or topical plaster on the lung area
- **Cough expectorant**: infusion sweetened with a little honey
- **Stimulating diaphoretic**: for when one has a fever but feel chilled and are shivering. support the body’s desire to increase our internal temperature and sweat.
- **Inflammation of the joints and tissues**: Rheumatic conditions; aches and pains: Topical rubefacient: (stimulating blood flow to below and to the surface of the skin) Use as a topical plaster, as an ingredient in muscle and joint liniments, and drink 2-3 cups per day of strong infusion between meals, with a little honey if desired
- **Digestive stimulant**: aids in the digestion of fats. Madame Marguerite Maury the biochemist, aromatherapist and herbalist advised patients suffering from slow digestion to eat the root grated on crudités and on fatty meat. For other digestive problems she would recommend a horseradish wine (see recipe below). Also used to relieve colic.
- **Cancer**: Horseradish is one of the most potent sources of glucosinolates which assists liver in detoxifying carcinogens and also demonstrated ability to shrink pre-existing tumors. “Although broccoli and other cruciferous vegetables also contain these compounds, horseradish has up to 10 times more glucosinolates than broccoli.” A recent study from the University of Illinois indicates that the substantial quantities of glucosinolates in horseradish can increase human resistance to cancer particularly colon and rectal cancers. “Glucosinolates increase the liver’s ability to detoxify carcinogens and they may actually suppress the growth of existing cancerous tumors. Our analysis of various horseradish varieties shows they are a rich source of these compounds.” Another recently published study from the University of Dundee in Scotland found that isothiocyanates and indoles are able to induce cancer-protective genes by activating specialized transcription factors and inactivating the pro-inflammatory mediator nuclear factor-kappa B. Are also capable of affecting cell-cycle arrest and stimulating apoptosis. - The enzyme peroxidase (HRP) which is found in...
horseradish is a useful tool for detecting antibodies in the molecular biology field. Research is being conducted on the herb to explore the possibility that the compounds it holds may help prevent cancer.

Detoxification: “In botanical physiology, the glucosinolates protect the plant from toxic or harsh environments. Recent studies indicate that they may have the same potential to protect humans from the effects of exposure to toxic chemicals in our environment. A Russian study demonstrate the ability to decrease the genotoxicity of environmental mutagens.”

Edema: its constituent, sinigrin, among its other actions has been found in studies to relieve symptoms of water retention, due to its stimulating effect on the blood capillaries.

Urinary infections: “horseradish stimulates the body to eliminate urine, so bacteria or other inflammatory agents in the bladder may be flushed out sooner than they normally would be eliminated.”

Analgesic: Reduces pain from sciatica, facial neuralgia, dental pain and insect bites: with topical application to the skin (surround with cheese cloth etc.) Fresh horseradish leaves are also analgesic and, pressed against the forehead to eliminate headache.

Vermifuge: kill intestinal worms in children and adults.

Skin treatment, to remove spots and blemishes and lighten freckles. “Use 4 oz freshly-grated horseradish, 1 qt buttermilk, and 4 oz glycerine. Place all in a ½ gal. jar and shake well. Let stand overnight in a cool place. Shake well again and strain through a fine strainer. Bottle and keep cold, in the fridge. Then at night wash the areas on your face you want to treat.”

Hair loss, dandruff: A mixture of horseradish in vinegar has been used effectively to treat seborrhea

Traditionally used to expel afterbirth.

Cautions & Contraindications:
Horseradish is a cultivated as a food vegetable for condiments and flavoring and very safe used small quantities.

But if large quantities of are consumed, it can cause symptoms excessive sweating, nausea, vomiting, diarrhea, abdominal pain, weakness, and gastrointestinal irritation due to glucosinolate a constituent in the fresh root. Cooking destroys the chemical’s toxicity. Grating horseradish releases the root’s pungent heat and breathing a large amount of horseradish fumes can irritate the lungs, Horseradish can be a topical irritant, causing skin welts, irritation, or itching in some people. As with mustard plasters, do not place fresh horseradish directly on skin. Use cloth in between.

Contraindicated for those with GI ulcers and kidney impairment. Horseradish has abortifacient effects. Use should be avoided during pregnancy and lactation because the allylisothiocyanates are toxic mucosal irritants. Despite its name, horseradish is poisonous to horses. No documented interactions. Theorized interactions may be: Anticholinergic drugs, such as atropine, may antagonize the effects of horseradish. Horseradish may enhance the parasympathetic effects of cholinergic drugs, such as betanechol or pyridostigmine, when given concomitantly.

Horseradish as Essential Oil
The essential oil of horseradish is steam-distilled from its roots and has a pungent, hot mustard fragrance. It has a pale yellow color.

Dangers: Taken internally it can be very toxic, caustic, and can cause inflammations. Topically it is a strong skin irritant and needs to be very strongly diluted in all applications. Even too much direct inhalation can be irritating to mucous membranes and nose.

Use: Similar to uses as herb - antibacterial agent, sinus & lung decongestant, reduces the symptoms from colds, influenza, sinusitis, coughs, bronchitis, asthma, tonsillitis and fever. The essential oil can be diluted into scalp oil or pomade to stimulated hair growth or address dandruff (of 3½ oz oil(s) of choice, 2 drops of wheat germ oil and up to 30 drops of horseradish oil. Apply to the scalp and massage in with the fingertips. Leave for a few hours, then wash off.)

Horseradish as Flower Essence
Horseradish (Amoracia rusticana) [Delta Gardens] – Old recurring thoughts or ideas receive energy to come forward for action, release or manifestation; one feels more power/energy to act; obsessive thinking patterns are discarded.

Horseradish ‘I feel my power’ (excerpt from Stars of the Meadow by David Dalton)

Indications: Feels stuck, feels unable to make change, feels powerless, feels lethagic, feels controlled by fate or by others, feels unable to have the life one wants, low esteem, lack of vigor, obsessive thinking patterns, blames others for problems and shortcomings.
The core issue addressed by Horseradish flower essence is a person's feeling of their own power over their world - their ability to change things, to manifest things that they want in their lives. Powerlessness has many levels, many faces and many symptoms, many of which are addressed by this essence.

Horseradish flower essence is useful in many types of situations where a person feels “stuck”, especially when the idea of moving forward evokes a fear that results in inertia. In cases like this, a person often finds many ways to avoid facing the real issue and can often throw much energy and action into matters of less significance. In some cases, obsessive thinking patterns can develop, or a depression sets in where one feels separated from one's true self or from one's real mission and goals in life. On the surface, and to others the person can seem busy, productive and involved, while inside feelings of helplessness and separation reside.

Horseradish brings the real issues and problems into focus where they can be dealt with; fears are often released and vital energy is made more available for use for important matters. Feelings of frustration and powerlessness are eased and a person is likely to feel more confidence. These subtle shifts often happen imperceptibly over the course of time. They can, however, emerge right away. Health, vigor, success, esteem and personal power all improve.

When taking Horseradish, it is good to have a goal or metaphor of success to work with. Goal - directed energies are enhanced greatly. Small successes can release confidences that were previously trapped by subconscious feelings of fear, inadequacy and powerlessness. These reserves find their way to the surface when horseradish is used to help the individual move forward.

Children who tend to be timid and lack confidence can benefit from this essence. Older children preparing for college and career choices would benefit from this essence, especially when there seems to be avoidance and procrastination over these issues.

Energetically, the third chakra is stimulated to coax an individual to act. At first this might feel confusing to the individual but with coaching he or she can feel more able to do things that previously felt impossible. The stimulation of the third chakra also affects confidence. Use Horseradish flower essence for animals who become depressed and inactive in response to owners feeling or expressing “bad temper” during stressful times. It is helpful for animals who tend to have poor circulation, slow digestion or colds.

**Preparation and Dosage:** Add one drop of stock essence to 100 drops of neutral solution for most treatments. Use frequently – as much as every two hours – until the person begins to respond. Three drops given three times per day is the dosage for most treatments.

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**Horseradish as Food**

Along with its medicinal properties, horseradish is rich in nutrients, particularly calcium, zinc, manganese, folate, potassium and Vit. C. Horseradish is a common condiment in German Scandinavian, British and Jewish cuisines. The root is usually grated in open air, as it is more pungent than the strongest onion. But the pungent heat of horseradish dissipates shortly after grating and so is often mixed with vinegar to stabilize the heat. Daikon is a milder species of horseradish from Japan that was introduced largely by Michio Kushi in macrobiotic cuisine and now has found its way into American cuisine as well. The young leaves can be used in a salad.

**Horseradish Recipe Notes**

While it is typically served as a (digestive) sauce for meat (particularly beef) and heavy meals, horseradish can be a wonderful flavor to add to a diversity of foods. It mixes well with apple, potato, beets, cheese, mustard, relish, eggs, broccoli, tomatoes, and squash. A few herbs that pair nicely with horseradish are bay, mint, chives and garlic. Horseradish sauces are served with beef, chicken, eggs, sausage sand are particularly good with smoked fish.

**Madame Margarite Maury’s Horseradish Wine**

*The famed biochemist herbalist and aromatherapist recommended 2 tbsp. of this wine a few times a day in winter to avoid coughs and colds. And for pre-menstrual retention of fluid, 1 tbsp. wine mixed with mineral water before meals. In cases of bad digestion or flatulence, drink 1 tsp diluted in a glass of hot water.*

Boil 1 liter (1¾ pints) good quality white wine with 14 oz sugar for a few minutes

www.EarthFlower.org  1 Union Square W. #309 NY, NY 10003  claudia@E
Take off heat and add 2 oz. horseradish cut into small pieces.
Put the mixture into a bottle and store in the dark for 2 – 3 weeks, shaking the bottle occasionally. Then strain and store in dark bottle.

**Simple Horseradish Sauce**

This sauce is traditionally serve as an accompaniment to meat dishes but can be mixed with potatoes and numerous other dishes

Mix prepared horseradish with mustard and either mayonnaise, sour cream or whole milk yogurt.

**Fresh Applesauce with Horseradish** from Amy Walworth Oberlin, Ohio

This is a quick and good applesauce. Greening or early acidic Macintosh apples are best. Makes about 5 cups.

- 8 apples, cored, peeled, cut into eighths
- 4 Tbsp butter
- 1 Tsp kosher salt
- ½ cup prepared horseradish, drained

In a large saucepan, cook the apples with the butter and 2 tablespoons water for 15 to 20 minutes, or until tender. Place the apple mixture in a food processor and puree. When smooth, add the salt and horseradish and pulse to mix.

Sources:

3. William LeSassier, private notes
5. Dr Christopher, The School of Natural Healing. [http://www.herballegacy.com/Horseradish.html](http://www.herballegacy.com/Horseradish.html)
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