



Spring has arrived and along with it, the beauty and fragrance of oriental magnolias, flowering cherries, and redbuds. Blooming alongside these, though, is a tree you have probably seen dozens of times, but never really noticed. Hiding in plain sight in fields, roadsides, and empty city lots is the humble but mighty elder tree. Famous among Harry Potter fans as the tree behind the most powerful wand of all time, the real-world elder is not just for wizards—or fiction. Its true power—increasingly supported by scientific and clinical studies—lies in its effectiveness in fighting pathogens and promoting wellness.

BOTH THE FLOWERS and fruit of *Sambucus nigra*, elderflowers and elderberries, have been traditionally used as medicine. (They are also used in foods and beverages, including elderberry wine, elderflower cordials, elderflower pancakes, and elderberry cobbler, to name a few.) European folk medicine has employed them as antivirals to fight colds and the flu, as anti-allergics, and as treatments for other respiratory illnesses. In traditional Chinese medicine, a related species, *Sambucus williamsii*, has been used for bone and joint diseases as an anti-inflammatory. Native Americans, as well as Egyptians and peoples of the Mediterranean basin, have used it for various conditions for thousands of years. In addition to folk uses, several great healers of history have left written testaments to the medicinal properties of the elder. Hippocrates referred to it as his “medicine chest” in 400 BCE. The ancient healer Pliny also used it, as did the medieval abbess, composer, and herbal healer Hildegard von Bingen, and a great many physicians since then.

Elder’s historical use and continued use as an herbal medicine is undisputed. Only recently, however, has this traditional remedy begun to be studied scientifically. Recent studies have identified a range of potential medicinal uses for elder, including for cancer, diabetes, and neurological damage. First and foremost, though, both laboratory and



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One of the earliest studies to look at elder in both the lab and the clinic was published in 1995. After finding that elderberry extract reduced hemagglutination and inhibited replication of several human influenza viruses in vitro, researchers Zakay-Rones et al. conducted a placebo-controlled study using the extract during an outbreak of influenza B in a small community in Panama. The results were dramatic. Over 90% of the group treated with elderberry extract showed significant improvement of symptoms within 2 days, compared with 16.7% of controls. Complete recovery from symptoms was also significantly faster in the elder extract-treated group vs. the placebo group, and the treated patients also showed higher

hemagglutination inhibition (HI) titers to influenza B than the control patients.

This study was especially important since the flu medications amantadine and rimantadine are not effective against influenza B at clinically safe doses. Even among influenza A strains, resistance to both of these is on the rise, and, like other anti-influenza drugs such as oseltamivir (Tamiflu), they are expensive. In addition, they have side effects that can be severe, especially in elderly patients, whereas elderberry extract has shown no serious side effects.

Since that initial study, several laboratory studies have supported elderberries’ anti-influenza efficacy against both A and B human influenza viruses. In addition, it may also be effective against high-pathogenicity bird flu: in 2006, Balasingam and

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Comparing elderberry extract with oseltamivir (Tamiflu) and amantadine, Sambucus compared favorably in inhibition of H1N1 influenza infections in vitro. Other studies have tested different strains, and have found *S. nigra* to be broadly effective against several influenza strains.



colleagues reported over 99% inhibition of avian influenza H5N1 virus titer in cell culture. Comparing elderberry extract with oseltamivir (Tamiflu) and amantadine, Sambucus compared favorably in inhibition of H1N1 influenza infections in vitro. Other studies have tested different strains, and have found *S. nigra* to be broadly effective against several influenza strains.

Human studies, while few, have supported these in vitro findings. In a study of Norwegian patients with flu-like symptoms, those given elderberry extract recovered four days sooner than those given a placebo. In a pilot clinical trial conducted in Shanghai, patients with flu-like symptoms were given either elderberry extract or a placebo, and

followed for 48 hours. Among the patients who received the elderberry extract, 60% had fevers that returned to normal within 24 hours, and 100% of them had returned to normal by 48 hours. In the placebo group, none were better after 24 hours, and only 22% had returned to normal after 48 hours. Headaches, muscle aches, and nasal congestion were all significantly decreased in severity and duration in the elderberry group.

In a 2016 report, Australian researchers Tiralongo et al. describe a randomized, double-blind placebo-controlled clinical trial of elderberry extract in air travelers. While there was no significant difference in the number of passengers who caught colds

(the elderberry group did catch fewer colds, but the difference was not great enough to reach statistical significance), the duration of illness was shorter and the symptoms were less severe in the passengers taking elderberry extract. Also, while no human studies have found a significant preventative effect, animal studies in chimpanzees and mice have indicated that *S. nigra* may prevent, as well as treat, the flu. (Interestingly, a preventative effect is not seen in cell cultures, indicating that this may be an immune system-based effect. If so, elder may work on two fronts—through direct inhibition of viruses, as seen in cell culture, and strengthening of immunity, seen only in animals.)

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Interestingly, while research comparing *S. nigra* extract to pharmaceutical drugs such as oseltamivir and amantadine is inconclusive, some studies have indicated that elder can work synergistically with the synthetics. Also, since, like most plant-based medicines, the antiviral properties of *S. nigra* are based on a complex mixture of several compounds, resistance is less likely to develop than with single-compound pharmaceuticals. This indicates that there should be little concern that preventative or frequent use of Sambucus extract will result in the development of resistance among its viral targets.

Beyond the flu, *S. nigra* extracts have been shown to be effective against several other viruses, including rhinoviruses (the common cold), herpes simplex virus type 1, and HIV. In addition, recently, German researchers Karwitz et al. tested the efficacy of elderberry extract on bacteria that commonly cause secondary infections following influenza, often leading to pneumonia. As expected, the elderberry extract did inhibit the influenza viruses in cell culture. However, it also acted as an effective antibacterial in cultures of Gram-positive *Streptococcus pyogenes*, Group C and G *Streptococci*, and the Gram-negative bacterium *Branhamella catarrhalis* (but not *Staphylococcus aureus*, *Streptococcus mutans*, or *Haemophilus parainfluenzae*), all bacteria associated with upper respiratory infections. In addition, elderberry extract has been shown to inhibit *Helicobacter pylori*, bacteria associated with ulcers.

Research on the effectiveness of elder against nonviral microbes is in its infancy. However, some ideas on Sambucus' mechanism(s) of action are coming to light. Researchers Randall Porter and Robert Bode speculate that, since *S. nigra* components bind to SA 2,6Gal sialic acid residues, attachment sites for influenza virus, they could competitively inhibit other pathogens that attach to these same residues. Several other pathogens also bind to SA 2,6Gal receptors, including *Helicobacter pylori*, *Streptococcus pneumoniae*, *Haemophilus ducreyi*, *Haemophilus influenzae*,

IDENTIFYING THE ELDER TREE AND FLOWERS

From a distance, white crepe myrtle flowers can be mistaken for elderflowers. While both trees produce inflorescences of tiny white flowers, they can be easily distinguished. Elderflower inflorescences have a flattened, umbrella-type shape, while crepe myrtle inflorescences are more grape-like in shape. In addition, the individual flowers are very different. Elderflowers have 5 flat petals reminiscent of forget-me-nots that are quite distinct in appearance from the crinkled petals of crepe myrtles.



IDENTIFYING ELDER BERRIES

The poisonous American pokeweed produces purple berries that can be mistaken for elderberries. (Pokeberries can cause vomiting and diarrhea; they are commonly eaten by toddlers who mistake them for grapes.) Aside from the elder tree being taller than pokeweed bushes, pokeberries are larger (pea-sized, vs. the tiny, BB-sized elderberries) and grow in long, narrow bunches, whereas elderberries grow in wide, umbrella-shaped bunches. For more information on distinguishing between pokeberries and elderberries, see <http://www.herbalrootszine.com/articles/elderberry-vs-pokeberry/>



and even the malaria parasite *Plasmodium falciparum*. An additional factor that could serve to explain some of elder's broad effects is the observation that Sambucus appears to strengthen the immune system

by stimulating macrophages.

While reported side effects from elderberry extract have been few and mild, the leaves and stems of the plant can be toxic, causing vomiting, abdominal cramps, and

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even neurological symptoms due to cyanogenic compounds. These same compounds are present at low levels in unripe fruit, but are denatured by cooking, so a good precaution is to cook elderberries instead of eating them raw. At this point, only the flowers have been approved by the German Commission E as an antiviral, and only the flowers have been designated as safe by the U.S. FDA as a flavoring agent. Nevertheless, studies on ripe elderberries have indicated that they are also safe, with minimal or no side effects.

In general, commercial anti-flu products, including Sambucol, Rubini, and the multi-herb Sinupret, use elderberries rather than elderflowers. Elderflowers are particularly convenient as home remedies, however—they can be made into an infusion (“tea”) directly after harvesting or can be dried or frozen for later use.

With few or no side effects, taking *S. nigra* extract is certainly worth a try. Extracts are available over the counter under several brand names, including Sambucol, Rubini, Quantum Elderberry, and Nature’s Way

Organic Sambucus, to name a few. However, if you live in [Louisiana/Arkansas], why not get your elderflowers or elderberries for free? Take a look around (based on the pictures in this article and others you can find online) – it won’t be long before you see an elder tree in bloom at this time of year. Later in the summer, you will see berries. Good places to forage are empty lots or the edges of fields. Chances are, once you recognize one elder tree, you will start seeing them all over!

You can make a simple infusion by placing flowers in a tea strainer, or you can make elderflower syrup by steeping the flowers in boiling water and sugar and then allowing the mixture to sit for 3-4 days at room temperature before straining through a mesh strainer or cheesecloth. (Remember, leave out the stems and leaves as they can contain toxins. Also, when using the berries, it’s best to cook them first.)

To make a delicious elderflower cordial, boil 1 kg of sugar in 5 cups of water and add 1/4 cup of lemon juice; carefully pour this

over your harvested elderflowers in a heat-safe container, and let the elderflowers steep in the syrup for 3-4 days. Then, add a few tablespoons of the resulting syrup to sparkling water (to taste) and serve over ice. (Store the remaining syrup in the refrigerator; one batch can be enough to make cordials all summer.)

For a cocktail, try adding your elderflower syrup to champagne, or to gin and tonic for a refreshing variation of this summer classic. Elderflower syrup is also lovely drizzled over pancakes, ice cream, or plain yogurt, or the flowers themselves can be dipped in batter and fried.

Elderberries, which are good sources of vitamin C as well as iron, potassium, vitamin A, and vitamin B6, can also be made into a syrup, or baked directly into muffins or pancakes. A quick keyword search will yield a host of traditional elderflower and elderberry recipes, as well as inventive culinary variations—there are endless ways to eat and drink this medicine! Bon appetit et bonne santé! ■

Elderflower Fritters – Gebackene Holunderblüten

Yield: 4-5 fritters

Ingredients

4-5 large heads of freshly picked elderflowers
1 large egg
70 g all-purpose flour (about 1/2 cup)
1/2 cup (120 ml) beer (I prefer blond lager) *
Pinch of fine salt
1 1/2 teaspoons fine, granulated sugar (optional)
Neutral tasting oil for frying (I use sunflower oil)
Confectioners’ sugar for dusting

Instructions

Gently shake any dirt or insects off your flower-heads. Do not wash the elderflowers as they will lose a lot of their flavor. Cut the stems but leave about 1 inch of stem for handling.

In a bowl, beat the egg using a hand whisk. Add half of the beer, salt, and sugar (if using) and mix until well combined. Adding only half of the liquid results in a thick batter that doesn’t give lumps much of a chance.

Add the flour and whisk until smooth. Whisk in the rest of the beer.

Heat about 1/2 inch of oil in a pan over medium heat. Holding the elderflowers by their stems, dip each elderflower into the batter, then drop them into the pan with the hot oil, flower side down.

Fry until lightly golden. Remove from the oil and place them briefly on a paper towel.

Dust the elderflower fritters with confectioners’ sugar and eat straight away, while crisp.

You can serve them simply dusted with sugar, with a scoop of vanilla ice cream, or fruit compote. Enjoy!

* If you don’t want to use beer, you can use sparkling water instead. I highly recommend the beer though.

Recipe Source: www.lilvienna.com/elderflower-fritters/

