



Ivy leaf cough mixtures

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Introduction

English ivy (*Hedera helix*) is a member of the Araliaceae family. It is a well-known decorative plant and is native to many parts of Europe and Southwest Asia. It is historically known for being a medicinal plant. It is thought to have expectorant (assist with coughing up and spitting out of mucus), mucolytic (help thin and loosen mucus) and spasmolytic (help relieve bronchial spasms) actions. It may also assist in relieving other typical symptoms associated with bronchitis such as shortness of breath and inflammation of the airways.

A word on bronchitis

Bronchitis is the medical term for inflamed airways and can be acute or chronic. Acute bronchitis is usually caused by viral infections such as a cold. These infections usually start in the nose or sinuses and then spread to the lungs causing the air passages of the lungs to become inflamed. Most symptoms associated with acute bronchitis usually clear within a few days. However, coughing may linger longer.

Smoking is among the most common causes of chronic bronchitis and is typically associated with increased production of thick mucus, shortness of breath and a persistent, productive (wet) cough. In this case, it is important to be able to cough up the mucus and not to suppress the cough.

The effects of ivy leaves on the airways

Ingredients such as saponins, flavonoids and phenolic acids may contribute to the medicinal properties of ivy leaf.

However, the mechanism of action has been clarified only for some active ingredients. Most of the research has focused on two key groups, namely saponins and flavonoids.

Saponins are the main active ingredients and are thought to be responsible for most of the therapeutic effects of ivy leaves. One type of saponin, hederacoside C, is considered to be a prodrug and is converted to alpha-hederin. It is believed that alpha-hederin acts on the cells in the lungs and increases the production and secretion of surfactant, which reduces the viscosity of viscous (sticky) mucus. Mucus has a role in lubricating and soothing irritated surfaces in the airways and may help to relieve respiratory symptoms such as dryness and irritation. Alpha-hederin may also ease breathing difficulties by relaxing the airways and dilating the bronchioles.

Ivy leaves may help to relieve bronchial spasms and reduce airway inflammation (anti-inflammatory effect). The anti-inflammatory effect may be due to the presence of flavonoids and phenolic acids in ivy leaves. Some *in vivo* studies have also shown that ivy leaf saponins have anti-inflammatory effects.

Selecting an appropriate cough mixture

Not all cough preparations contain the same active ingredients and they may also differ with respect to other included ingredients, such as alcohol or sugar. Consult the pharmacist if there is any doubt regarding the suitability of an over-the-counter (OTC) product. To ensure the safe use of OTC medicines, one should always use the product as indicated on the package insert. A cough may also be a symptom of another medical condition and it is important to know when to consult a doctor. The following do's and don'ts should be taken into consideration before reaching for a cough treatment:

Do

- Drink enough fluids such as water, juice or soup; this helps soothe a dry, irritated throat and loosens phlegm.
- Use a cool-mist humidifier or steam vapouriser.
- Avoid allergens (such as dust, animal dander and pollens from grasses or trees) that can cause a cough.
- Avoid irritants (such as cigarette smoke or air pollution) that can cause a cough.
- Make sure that the product is suitable for children. There may be age restrictions on certain OTC cough and cold medicines.

Don't

- Smoke
- Use a cough suppressant to treat a productive or 'wet' cough, as it promotes stasis. Mucus is retained and not coughed up and this may increase the risk of infection.
- Use a cough suppressant and expectorant simultaneously. This is an irrational combination as these products have opposite effects; the one reduces coughing and the other promotes coughing.
- Use bronchodilators for the treatment of an acute cough in non-asthmatic children.
- Use promethazine-containing products in children under the age of two years (it is contraindicated).

Refer to the doctor

- Persistent coughs, that is, coughs that are not improving and last more than two weeks.
- Coughs not responding to an appropriate cough treatment for two weeks.
- Patients presenting with:
 - coloured sputum (yellow, green, rust coloured or blood stained)
 - chest pain
 - shortness of breath or wheezing
 - symptoms suggestive of whooping cough or croup
 - a recurrent night-time cough
 - any side effects or if their general health worsens while using an OTC product.

Preparations containing ivy leaves

- Act as an expectorant in patients with a productive cough.
- May assist in relieving an irritating cough and may help to ease breathing. It is thought to:
 - loosen or thin mucus in the airways, which makes it easier to clear the airways (thinner mucus can be coughed up easier)
 - reduce airway inflammation, relieve bronchial spasm, relax convulsive coughing (reduces coughing spasms and cough frequency)
 - soothe or calm painful and troublesome coughs
- May be used to alleviate symptoms in patients with inflammation of the airways or with upper respiratory tract conditions characterised by excessive production of viscous mucus and coughing.
- It is indicated for:
 - acute catarrh (inflammation) of the airways accompanied by coughing
 - symptomatic treatment of chronic inflammatory bronchial diseases such as bronchitis.

Conclusion

Although the efficacy of ivy leaf formulations has been demonstrated in studies, more well-controlled clinical trials are needed to confirm the results. Results of some studies showed that:

- ivy leaves improved symptoms associated with acute or chronic bronchial inflammatory diseases
- these preparations help to improve or eliminate a cough and expectoration, relieve chest pain and improve breathing and lung function
- different extracts of *Hedera helix* were well-tolerated and effective in children with acute bronchitis and when used as an add-on treatment in children with bronchial asthma. However, owing to the lack of a placebo or reference control, some studies had only limited value with respect to efficacy.

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