

Medicinal Uses of Herbal Plants

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ABSTRACT

Currently, herbs are applied to the treatment of chronic and acute conditions and various ailments and problems such as cardiovascular disease, prostate problems, depression, inflammation, and to boost the immune system, to name but a few. In China, in 2003, traditional herbal medicines played a prominent role in the strategy to contain and treat severe acute respiratory syndrome (SARS), and in Africa, a traditional herbal medicine, the Africa flower, has been used for decades to treat wasting symptoms associated with HIV (De Smet 2005; Tilburt and Kaptchuk 2008). Herbal medicines are also very common in Europe, with Germany and France leading in over-the-counter sales among European countries, and in most developed countries, one can find essential oils, herbal extracts, or herbal teas being sold in pharmacies with conventional drugs.

Herbs and plants can be processed and can be taken in different ways and forms, and they include the whole herb, teas, syrup, essential oils, ointments, salves, rubs, capsules, and tablets that contain a ground or powdered form of a raw herb or its dried extract. Plants and herbs extract vary in the solvent used for extraction, temperature, and extraction time, and include alcoholic extracts (tinctures), vinegars (acetic acid extracts), hot water extract (tisanes), long-term boiled extract, usually roots or bark (decoctions), and cold infusion of plants (macerates). There is no standardization, and components of an herbal extract or a product are likely to vary significantly between batches and producers.

KEYWORDS: medicinal, herbal, extracts, plants, traditional, diseases

INTRODUCTION

Plant-based products used to treat diseases or to maintain health, are called herbal products, botanical products, or phytomedicines. A product made from plant sources and used only for internal use is called an herbal supplement.

Many prescription medicines and over-the-counter medicines are also made from plant products. But these products contain only purified ingredients and are regulated by the FDA. Herbal supplements may contain entire plants or plant parts.

Herbal supplements come in all forms. They may be dried, chopped, powdered, or in capsule or liquid form. They can be used in many ways, including:

- Swallowed as pills, powders, or concentrated liquid extracts (tinctures)
- Brewed as tea
- Used on the skin as gels, lotions, or creams
- Added to bath water[1,2,3]

The practice of using herbal supplements dates back thousands of years. Today, herbal supplement use is common in the U.S. But they are not for everyone. They are not subject to close scrutiny by the FDA or other governing agencies. For this reason, herbal supplements are still controversial. Talk with your healthcare provider about any symptoms or conditions you have. Discuss the use of herbal supplements.

The FDA and herbal supplements

The FDA considers herbal supplements as foods, not medicines. So they are not subject to the same testing, manufacturing, and labeling standards and regulations as medicines.

You can now see labels that explain how herbs can influence different actions in the body. But herbal supplement labels are not permitted to say that herbs treat specific health conditions. This is because herbal supplements are not subject to clinical trials or to the same manufacturing standards as prescription or traditional over-the-counter medicines. There is no research that proves a certain herb cures or treats a health problem or prevents a certain condition.

For example, St. John's wort is a popular herbal supplement. It's thought to be useful for treating depression in some cases. A product label on St. John's wort might say that it "enhances mood." But it can't claim to treat a specific condition, such as depression.

Herbal supplements, unlike medicines, do not need to be standardized to make sure of batch-to-batch consistency. Some manufacturers may use the word standardized on a supplement label. But it may not mean the same thing from one manufacturer to the next.

Precautions when choosing herbal supplements

Herbal supplements can interact with conventional medicines. Some may have strong effects. Don't self-diagnose or self-prescribe. Talk with your healthcare provider before taking herbal supplements.

- Educate yourself. Learn as much as you can about the herbs you are taking. Talk with your provider and contact herbal supplement manufacturers for information. Pharmacists can be easy to access, reliable sources of information on the effects of herbal supplements. They can also provide helpful information about any interactions between medicines and herbal supplements.
- Follow label instructions carefully. If you use herbal supplements, use the prescribed dosage only. Never take more than the advised dosage. Look for information about who should not take the supplement. Find out if there are any health conditions, certain medicine interactions, or other factors when the supplement should not be used.

- Work with a professional. Look for the services of a trained and licensed herbalist or licensed naturopathic healthcare provider who has a lot of training in this area.
- Watch for side effects. [4,5,6] If you have symptoms, such as nausea, dizziness, rash, headache, or upset stomach, reduce the dosage or stop taking the supplement. Get medical care if symptoms don't decrease. Or if they get worse.
- Watch for allergic reactions. A severe allergic reaction can cause trouble breathing. If such a problem happens, call 911 or the emergency number in your area for help.
- Research the company whose herbs you are taking. Herbal supplements are not all made the same way. Choose a reputable manufacturer's brand. Ask yourself:
 - Is the manufacturer researching its own herbal products? Or just relying on the research efforts of others?
 - Does the product make outlandish or hard-to-prove claims?
 - Does the product label give information about the standardized formula, side effects, ingredients, directions, and precautions?
 - Is the label information clear and easy to read?
 - Is there a toll-free telephone number, an address? Or a website address listed so consumers can find out more information about the product?
 - Is the product tested and certified by a third party company to make sure of quality, safety and effectiveness?

What are some of the most common herbal supplements?

This list of common herbal supplements is for informational purposes only. Talk with your healthcare provider to discuss your own health conditions or symptoms. Don't self-diagnose. Talk with your provider before taking any herbal supplements.

Herbal Supplements	Description
Black cohosh	This shrub-like plant of eastern North America gets its name from the Native American word for rough. This refers to its root structure. It's generally used for menopausal conditions, painful menstruation, uterine spasms, and vaginitis.
Echinacea	This is often used to make the body's immune system stronger. It's also considered a prevention against colds and flu. This U.S. native plant is also called the purple coneflower.
Evening primrose	Oil from this night-blooming, bright yellow flowering plant may be helpful in reducing symptoms of arthritis and premenstrual syndrome (PMS).
Feverfew	The pain-relieving properties of feverfew have been used for migraine headaches and menstrual cramps.
Garlic	Garlic is generally used for cardiovascular conditions. This includes high cholesterol and triglyceride levels linked to the risk of atherosclerosis.
Ginkgo biloba	This herb is used for many conditions linked to aging. This includes poor circulation and memory loss.
Ginseng	This is used as a general tonic to increase overall body tone. It's believed helpful in raising energy levels and improving resistance to stress.
Goldenseal	This herb, native to the U.S., is popular for its healing properties and germ-stopping qualities. It is often used for colds and flu. It's also popular for soothing the nose lining when it's inflamed or sore.
Green tea	This herb is used to combat extreme tiredness (fatigue), prevent arteriosclerosis and certain cancers, lower cholesterol, and help with weight loss.
Hawthorn	This is used for several heart-related conditions. It's supportive in treating angina, atherosclerosis, heart failure, and high blood pressure.[7,8,9]
Saw palmetto	This may be used for enlarged prostate. This is a common condition in men over age 50.
St. John's wort	Wild-growing with yellow flowers, this herb has been used for centuries to treat mental disorders. Today it's a popular recommendation for mild to moderate depression.

It's important to remember that herbal supplements are not regulated by the FDA. They have not been tested in an FDA-approved clinical trial to prove their effectiveness in treating or managing health conditions.

DISCUSSION

Herbs are the leaf part of a plant that is used in cooking - these can be used fresh or dried.

Any other part of the plant, which is usually dried, is referred to as a spice. These include, for example, barks (cinnamon), berries (peppercorns), seeds (cumin), roots (turmeric), flowers (chamomile), buds (cloves) and stigmas of flowers (saffron).

Herbs are a fantastic way to add flavour and colour to any sort of dish or drink, whether sweet or savoury, without adding fat, salt or sugars. In addition to flavour and colour,

they each also tend to have their own set of health-promoting properties.

Generally, fresh herbs are delicately flavoured, so if adding them to your cooking, do so in the last few minutes.

Tasting your dish as you go along will help you tell if you've added enough. If not enough herbs are used, then little difference will be made to the flavour of the dish, but if too many herbs are added, their flavour will overpower other ingredients.[10,11,12]

Health benefits of herbs

Consuming herbs may help to prevent and manage heart disease, cancer and diabetes. It may also help to reduce blood clots and provide anti-inflammatory and anti-tumour properties. Research is ongoing but studies have shown that:

- Garlic, linseed, fenugreek and lemongrass may help lower cholesterol.
- Garlic is useful for people with mildly elevated blood pressure.
- Fenugreek can help control blood sugar and insulin activity (as can linseed, flaxseed and cinnamon).
- Garlic, onions, chives, leeks, mint, basil, oregano, sage and many other herbs can help protect against cancer.
- Herbs are rich in antioxidants, especially cloves, cinnamon, sage, oregano and thyme.

Fresh herbs often contain higher antioxidant levels compared to processed or dried herbs. If you are using herbs in order to harness their health-promoting aspects first and foremost, aim to add your fresh herbs at the end of cooking or as you serve to preserve these properties.

Cooking with herbs

You are only limited by your imagination with it comes to using herbs in the kitchen - they can be added to virtually any recipe. Try adding herbs to:

- stews and casseroles
- soups
- breads
- mustards
- marinades
- butters
- sauces
- salad dressings
- stocks
- vinegars
- vinaigrettes
- yoghurts
- custards
- desserts
- drinks.

They don't always have to be added into a dish either - herbs added once a dish has been served is another great way of enhancing the flavour, smell and visual appeal of your dish. For example, spaghetti Bolognese with some fresh basil leaves on top or a pumpkin or chicken dish with fresh sage leaves.[13,14,15]

Good herb and food combinations

There are unlimited ways to use herbs in your cooking. Here are some traditional pairings to get you started:

- basil - pesto, tomato sauce, tomato soup, tomato juice, potato dishes, prawns, meat, chicken and poultry, pasta, rice, egg dishes, strawberries
- bay leaves - soups, stews, casseroles, meat and poultry marinades, stocks
- chilli - meat, chicken and poultry, shellfish, tomato dishes, curries
- chives - salads, chicken, soups, cheese dishes, egg dishes, mayonnaise, vinaigrettes
- coriander - Asian dishes, stir fries, curries, soups, salads, seafood, guacamole

- dill - salads, sauces, fish, sour cream, cheese and potato dishes
- fennel - stuffings, sauces, seafood, salads
- garlic - soups, sauces, pasta, meat, chicken, shellfish, pesto, salad dressings, bread[16,17,18]
- ginger - cakes, biscuits, Asian dishes
- lemongrass - Asian dishes, stir fries, curries, seafood, soups, tea
- marjoram - meat, fish, egg dishes, cheese dishes, pizza
- mint - drinks, confectionery, meat, chicken, yoghurt, desserts, sauces, vegetable dishes
- oregano - cheese dishes, egg dishes, tomato sauce, pizza, meat, stuffing, bread, pasta
- parsley - pesto, egg dishes, pasta, rice dishes, salads, butter, sauces, seafood, vegetable dishes
- rosemary - fish, poultry, meat, bread, sauces, soups
- sage - stuffings, tomato dishes, cheese dishes, pumpkin dishes, chicken dishes
- tarragon - salad dressing, egg dishes
- thyme - chowders, bread, chicken and poultry, soups, stock, stews, stuffings, butter, cheese, mayonnaise, mustard, vinegar.

Just remember that for health benefits, butters and creams are best saved for sometimes rather than everyday foods.

Tips for cooking with herbs

Suggestions for cooking with herbs include:

- Dried herbs are more strongly flavoured than fresh. As a general rule, one teaspoon of dried herbs equals 4 teaspoons of fresh.
- If you regularly use herbs, you might like to create a 'bouquet garni' by tying chopped and mixed herbs in little muslin bags - these can be added to your cooking for flavour but removed before serving.
- Some herbs are harder than others (like rosemary and parsley) and will retain their flavour during the cooking process - these can be added at the start of your cooking.
- Some herbs are used only to flavour a dish but are not eaten - bay leaves for example.
- The flavour of herbs fades with time, so discard dried herbs after 12 months.
- Dried whole herbs, where the leaves are still attached to their stalk, tend to have a stronger flavour than loose leaves sold in packets or jars.

Herb combinations

Although you can use one type of herb at a time, there are many great combinations that work well too.

Some traditional combinations are:

- basil - with chives, chilli, garlic, oregano
- bay - with parsley, thyme, garlic, oregano, marjoram
- chilli - with coriander, garlic, ginger, lemongrass, mint, oregano
- chives - with basil, garlic, tarragon

- dill – with chives, garlic, parsley, tarragon
- garlic – with basil, rosemary, sage, fennel, chilli, coriander
- oregano – with basil, parsley, chives, thyme, bay, chilli
- sage – with rosemary, garlic, marjoram
- thyme – with bay, parsley, garlic, rosemary.

As our food landscape is ever-evolving, particularly with the influence new migrant groups bring with them, so does the availability of herbs that previously were uncommon in Australia. For example, Vietnamese food is known for using herbs with such abundance that, at times, there are more herbs than salad leaves in a Vietnamese salad.

Native ingredients like lemon myrtle, river mint and pepperberry, for example, are also starting to become more widely available.

Be adventurous with herbs

Herbs can be used in an unlimited number of ways. The more you use herbs, the more adventurous you will become.[19,20]

Not sure where to start?

- Follow a recipe that calls for one or 2 herbs you haven't used before.
- Experiment with using other herbs in place of herbs called for in a recipe to see how the dish turns out.
- Make your own bouquet garni.
- Grow some herbs in pots on your windowsill or in the garden for use in your cooking.
- Visit an Asian market (for example) to try experimenting with some new flavours.

Besides boosting the flavours, smells, looks and textures in your meals, the more herbs you try, the wider the variety of potential health benefits you are likely to receive.

Where to get help

- Greengrocer
- Market
- Supermarket
- Nursery

RESULTS

Herbal medicine has its origins in ancient cultures. It involves the medicinal use of plants to treat disease and enhance general health and wellbeing.

Some herbs have potent (powerful) ingredients and should be taken with the same level of caution as pharmaceutical medications. In fact, many pharmaceutical medications are based on man-made versions of naturally occurring compounds found in plants. For instance, the heart medicine digitalis was derived from the foxglove plant.

Active ingredients and herbal medicine

Herbal medicines contain active ingredients. The active ingredients of many herbal preparations are as yet unknown. Some pharmaceutical medications are based on a single active ingredient derived from a plant source. Practitioners of herbal medicine believe that an active ingredient can lose its impact or become less safe if used in isolation from the rest of the plant.

For instance, salicylic acid is found in the plant meadowsweet and is used to make aspirin. Aspirin can cause the lining of the stomach to bleed, but meadowsweet naturally contains other compounds that prevent irritation from salicylic acid.

According to herbal medicine practitioners, the effect of the whole plant is greater than its parts. Critics argue that the nature of herbal medicine makes it difficult to give a measured dose of an active ingredient.

Medicinal uses for specific herbs

Herbal medicine aims to return the body to a state of natural balance so that it can heal itself. Different herbs act on different systems of the body.[21,22]

Some herbs that are commonly used in herbal medicine, and their traditional uses, include:

- Echinacea – to stimulate the immune system and aid the body in fighting infection. Used to treat ailments such as boils, fever and herpes.
- Dong quai (dang gui) – used for gynaecological complaints such as premenstrual tension, menopause symptoms and period pain. Some studies indicate that dong quai can lower blood pressure.
- Garlic – used to reduce the risk of heart disease by lowering levels of blood fats and cholesterol (a type of blood fat). The antibiotic and antiviral properties of garlic mean that it is also used to fight colds, sinusitis and other respiratory infections.
- Ginger – many studies have shown ginger to be useful in treating nausea, including motion sickness and morning sickness.
- Ginkgo biloba – commonly used to treat poor blood circulation and tinnitus (ringing in the ears).
- Ginseng – generally used to treat fatigue, for example during recovery from illness. It is also used to reduce blood pressure and cholesterol levels, however overuse of ginseng has been associated with raised blood pressure.
- Hypericum perforatum – commonly known as St John's Wort. Studies have suggested that St John's Wort is just as effective as some pharmaceutical antidepressants in treating mild to moderate depression. It is also used for anxiety and insomnia. However, St John's Wort can interact with a number of prescription medications, including the oral contraceptive pill, and stop them from working properly.

Do not self-diagnose ailments

It is very important that people do not self-diagnose any health conditions. Any medication (herbal or otherwise) should be taken under the supervision of a knowledgeable and qualified practitioner.

Special considerations for herbal medicine

Herbal medicines can be mistakenly thought to be completely safe because they are 'natural' products. This is not always correct.

Herbal medicines may produce negative effects that can range from mild to severe, including:

- allergic reactions and rashes
- asthma

- headaches
- nausea
- vomiting
- diarrhoea.

Like other prescription medications, herbal medicine should always be prescribed by a qualified and registered practitioner. Contact the professional association for your chosen therapy and ask for a list of members in your area. This may include:

- Australian Health Practitioner Regulation Agency (AHPRA) – Chinese medicine practitioners, chiropractors, osteopaths
- Naturopaths and Herbalists Association of Australia (NHAA) – Western herbalists and naturopaths
- Australian Acupuncture and Chinese Medicine Association – the peak body for Chinese medicine, acupuncturists, herbalists and traditional remedial massage practitioners.

During the first visit with your practitioner, ask about their training and qualifications. Be very cautious about any practitioner who advises you to abandon your conventional medical treatment.

Always tell your herbal medicine practitioner:

- which over-the-counter, herbal medicines, complementary medicines and prescription medications you are taking
- any allergic reactions you have experienced
- if you are pregnant, planning to become pregnant, or breastfeeding.

A. Be aware herbal medicine can interact with other medications

Herbal medications and supplements may interact in harmful ways with over-the-counter or prescription medicines you are taking.

Taking herbal supplements may increase or decrease the effectiveness of other drugs you are taking or may increase the risk of negative side effects. For example, St John's Wort mostly decreases the effectiveness of other medicines but increases the effects of antidepressants.

If you are considering taking herbal medicines, it is always a good idea to talk to your doctor about possible side effects and interactions with other medications you are taking.

B. Purchase herbal medicine products from a reputable supplier

Not all herbal medicines that are sold are safe. Always purchase from a source that stocks products from a reputable manufacturer or supplier, such as health food stores, supermarkets, pharmacies or from a reputable practitioner.

Be careful about purchasing herbal medicines over the internet. Unregulated herbal medicines from overseas may not be manufactured to the same quality and standard as regulated medicines. In some cases, products purchased online have been found to have dangerous levels of lead, mercury or arsenic, which can cause serious health problems.

Herbal medicines made in Australia are subject to regulations. Consult with your pharmacist about the safety and effectiveness of the herbal medicine or supplements you are thinking of buying. If you are considering taking herbal medicine, it is recommended that you:

- Never stop taking prescribed medications without consulting your doctor.
- Always tell your doctor if you are planning to start a course of herbal medicine for your condition.
- Seek advice from your qualified health practitioner, your doctor or your pharmacist about the herbal medicine's safety, quality and effectiveness.
- Always purchase products from a reputable source. Be cautious about buying herbal medicines or supplements manufactured overseas.
- Take all herbal medicines strictly as prescribed and consult your health practitioner immediately if you experience any side effects.[22]

CONCLUSION

Herbs were used in prehistoric medicine. As far back as 5000 BCE, evidence that Sumerians used herbs in medicine was inscribed on cuneiform.^[16] In 162 CE, the physician Galen was known for concocting complicated herbal remedies that contained up to 100 ingredients.^[17]

Some plants contain phytochemicals that have effects on the body. There may be some effects when consumed in the small levels that typify culinary "spicing", and some herbs are toxic in larger quantities. For instance, some types of herbal extract, such as the extract of St. John's-wort (Hypericum perforatum) or of kava (Piper methysticum) can be used for medical purposes to relieve depression and stress.^[18] However, large amounts of these herbs may lead to toxic overload that may involve complications, some of a serious nature, and should be used with caution. Complications can also arise when being taken with some prescription medicines.

Herbs have long been used as the basis of traditional Chinese herbal medicine, with usage dating as far back as the first century CE and far before. In India, the Ayurveda medicinal system is based on herbs. Medicinal use of herbs in Western cultures has its roots in the Hippocratic (Greek) elemental healing system, based on a quaternary elemental healing metaphor. Famous herbalist of the Western tradition include Avicenna (Persian), Galen (Roman), Paracelsus (German Swiss), Culpepper (English) and the botanically inclined Eclectic physicians of 19th century/early 20th century America (John Milton Scudder, Harvey Wickes Felter, John Uri Lloyd). Modern pharmaceuticals had their origins in crude herbal medicines, and to this day, some drugs are still extracted as fractionate/isolate compounds from raw herbs and then purified to meet pharmaceutical standards.

There is a record dated 1226 for '12d for Roses for Baron's Chamber and in 1516 for flowers and rushes for chambers for Henry the 9th^[6]

Certain herbs contain psychoactive properties that have been used for both religious and recreational purposes by humans since the early Holocene era, notably the leaves and extracts of the cannabis and coca plants. The leaves of the coca plant have been chewed by people in northern Peruvian societies for over 8,000 years,^[19] while the use of cannabis as

a psychoactive substance dates back to the first century CE in China and northern Africa.^[20]

Indigenous Australian peoples developed "bush medicine" based on plants that were readily available to them. The isolation of these groups meant the remedies developed were for far less serious diseases than the western illnesses they contracted during colonisation. Herbs such as river mint, wattle and eucalyptus were used for coughs, diarrhea, fever and headaches^[22]

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