Active Ingredients in Herbs

Herbs are very much like foods (indeed in many cases they are indistinguishable from them). They have many constituents including vitamins and minerals and active ingredients that have a variety of medicinal benefits. These active components include: volatile oils, tannins, mucilage, alkaloids, bitters and flavonoids.

Alkaloids

These vary from one plant to another in their components and actions however they all contain nitrogen.

They tend to have potent effects and in some cases they are toxic in large amounts. These are usually found in herbs that are restricted to qualified herbalists and doctors. They include morphine (from the opium poppy), nicotine (in tobacco), atropine (in deadly nightshade) theobromide (in coffee, black tea and cocoa).

Alkaloids can be found in small amounts in some medicinal herbs where they act as a catalyst to other healing agents without being involved themselves. The alkaloids in comfrey and coltsfoot are examples.

Anthraquinones

These are glycosides which are yellow. They were often used in the past to produce dyes.

They act to stimulate muscular contraction of the large intestine and so have a laxative effect. Herbs such as dock, senna, and aloe contain anthraquinones. If they are taken alone they can have a griping effect in the bowel. They are therefore taken with a calmative (flatulence treating) herbs such as ginger or fennel.

These herbs are best used for the short term treatment of constipation while the underlying causes are dealt with. Longer term use can reduce the tone of the bowel.

Bitters

Many herbs contain bitter ingredients. These mainly affect the digestive tract, stimulating the secretion of digestive juices and enzymes in the stomach and the flow of bile from the liver.

They enhance appetite and improve digestion and absorption of nutrients from food. They are prescribed for people with poor appetite, a sluggish bowel, gall bladder and liver problems, gastritis, and to aid convalescence after the flu and other illnesses.

Bitter herbs can also have other beneficial effects. They can:

- act on the immune system,
- have antimicrobial and antineoplastic (anti-tumor) effects,
- have a relaxing effect on the nervous system or
- have an anti-inflammatory action.

The beneficial action of the bitters starts in the mouth - so for best effect they need to be tasted (despite our dislike of their effect on our tongues).

Flavonoids

Flavonoids or glycosides are responsible for the yellow or orange colors in herbs, such as cowslip.

Many flavonoids have:

- a diuretic action,
- some such as licorice are antispasmodic and anti-inflammatory and
- others are antiseptic.

Bioflavonoids are a part of plants that contain vitamin C, such as citrus fruit, rosehip, black current and cherries. Bioflavonoids act with vitamin C to enhance its absorption and metabolism in the body.

Bioflavonoids have a strengthening and healing effect on blood vessels. They are used to treat conditions such as capillary fragility, tendency to bruising and nosebleeds and high blood pressure.

Mucilage

Mucilage is a sweet, gel like substance. It has the tendency to draw water to it - so that when water is added it swells to form a viscous fluid.

It is able to form a protective layer over mucous membranes and skin - thus effectively soothing irritation and relieving inflammation. Plants with high mucilage content include flax or psyllium seeds. These are used to draw water into the bowel and thereby bulk out the stool making an effective laxative.

Saponins

Saponins are glycosides. They are found in many medicinal plants and like soap they lather when they are mixed with water. Soapwort has a high saponin content and can be used to make natural soap.

Saponins have a number of different effects on the body including:

- an expectorant effect (cowslip and mullein),
- diuretic effects (horsetail and asparagus),
- beneficial effects on the circulatory system, reducing the fragility of the blood vessel walls (horse chestnut).

The steroidal saponins have a similar structure and function to the human sex hormones produced by the ovaries, adrenal glands and in men the testes. They are used most widely in the treatment of women's problems. They are hormone regulating and as such are called 'adaptogens'. The best known of these is ginseng. Other adaptogens include:

- wild yam,
- licorice,

- partridge berry, and
- blue and black cohosh.

Tannins

Tannin acts as an astringent. This action is a result of their ability to bind albumen (a protein found in the skin and mucous membranes) to form a protective layer that is resistant to disease.

Tannins also have healing actions, protecting from irritation while at the same time reducing inflammation. Plant which contain tannins include, witch hazel, oak bark and beth root.

These herbs are used for:

- cuts and wounds,
- hemorrhoids,
- varicose veins,
- catarrh,
- heavy periods and
- inflammatory conditions of the digestive tract.

Volatile oils

Volatile or essential oils are what give the aroma and flavour to herbs that we use in foods. These herbs include rosemary, marjoram, dill, basil, sage, thyme and mint.

Volatile or essential oils are made up of different chemical compounds. The oils:

- have antiseptic and anti-microbial action,
- enhance the body's ability to fight off a range of infections,
- have anti-inflammatory and antispasmodic effects (chamomile, yarrow),
- are expectorants (thyme, hyssop),
- are diuretic (chamomile, parsley)
- are tonics enhancing the appetite and the digestion and absorption of food (rosemary, fennel, marjoram), and
- stimulate the heart and circulatory system (ginger, rosemary, thyme).

The essential oils can be taken into the body in a number of different ways. They can enter the blood stream via:

- food, drinks or in herbal medicine,
- being absorbed when placed directly under the tongue,
- through the pores of the skin when in massage oils or
- inhaled.

NOTE: Do not take internally any essential oils that have been prepared for external uses, such as aromatherapy or massage.

They are rapidly dispersed and during pregnancy and lactation they are passed to the baby through the placenta and breast milk.

When the oils are inhaled the nerve endings in the upper part of the nose carry messages to the brain and in particular the part of the brain related to our thoughts and emotions (the limbic system). When the oils enter our system through our skin as in a bath or massage, they stimulate the nerve endings in the skin which send messages to the underlying tissues (muscles, blood, lymphatic vessels and nerves). The messages are relayed to the pituitary gland (this gland regulates the body's hormones).

References

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