

# Herbal Products: Facts and Fallacies



Today there is a large number of plant extract added consumer products in the market. Among these products are various herbal soaps, toothpastes, shampoos, various creams for facial and skin application, various hair oils, mouth washing solutions and various medicinal material added preparations claiming therapeutic properties. About five decades ago, around 1950's, plant extract added commercial products could be bought only from pharmacies. These products were bought by a selected limited number of consumers. Only a very few small scale producer produced these herbal extracts containing consumer products. They have selected a few handfuls of medicinal plants containing therapeutic properties and added parts of them to consumer products. Today the problem is that not only the small scale producers, but also large manufacturers releasing herbal extract containing products to the market. These products can be bought not only from small sales outlets, but also from super markets.

Before the various medicines were produced in the laboratory, in earlier days man used natural herbal products to cure his ailments. Even today, about 75% of the human population depends on the natural herbal material to cure diseases. The main reason behind this selection is that, herbal product are able to cure without side effects according to traditional knowledge of societies. Because of this reason, if any consumer uses any products containing herbal extract he or she expects a definite therapeutic property from the said product.

The question that we should ask is that whether the consumer gets the expected therapeutic healing by using the said herbal products. To answer this question one should consider a number of factors.

The number one question is that whether the authentic medicinal plants were used to obtain the herbal extracts. If the answer is yes, the next question will be whether the plants or trees were in a sufficiently mature state? This is a compulsory question that should be asked when considering medicinal plants. Why? Because all chemicals and chemical compounds found in a plant are made by biosynthetic pathways. Generally, chemicals responsible for healing effects have been extracted from sufficiently matured herbs and plants.

The next question is that the extract is taken from which part of the plant. The therapeutics chemicals are deposited in various parts of the plant. The well known *Vinca rosea* is such a plant. The roots contain a chemical called *Adjmaladene*, it is used to treat high blood pressure. Leaves contain two chemicals called Vincristine and Vinblastine which are used to test leukemia. Because of this reason if the root extract is used instead of leaf extract, the expected therapeutic result is not obtained.

The extraction process of chemicals from the plant source is also a complex one. If the extraction process is not properly followed, there may be no active chemicals in the extract. After harvesting the plant, it is subjected to post harvest processes such as proper storage, drying, cutting and powdering. After this, it is subjected a selected, recommended extraction procedure. Water or alcohol or organic solvents have to be used. To release the chemical from plant components, correct acidity or alkalinity has to be used. If the correct procedure is not followed the wanted chemical compound may not be extracted and remains in the plant material. In certain cases the powdered plant material can be directly used instead of extracting its components.

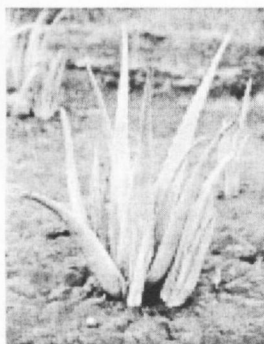
When plant chemicals are considered, there is one important factor that has to be taken into account. Most chemicals in plants after harvesting undergo a gradual degrading and denaturing process. Because of this reason,

if one is adding herbal extracts to his products, the extracts have to be obtained from fresh plant material.

So far, I have mentioned some recommended procedures when obtaining plant extracts. Next we shall consider various products containing plant extracts.

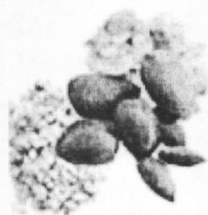
Toothpastes take the most important place carrying the herbal products. The basic material, the white paste is from precipitated calcium carbonate ( $\text{CaCO}_3$ ) or from aluminum trihydroxide ( $\text{Al}(\text{OH})_3$ ). The main function of these materials is to clean, remove particles and polish the tooth surface. There are a large number of oral diseases, based on teeth. Some of them are bleeding gum, loose teeth, and inflammation of the gum. Most of the herbal extracts are added to a tooth paste to prevent or cure such diseases. Therefore, not any herbal extract, but only those extracts having preventing action should be added. They should prevent most of the tooth diseases and prolong the life of a tooth, while improving total oral hygiene.

In Ayurveda medicine and as found in research studies, there are a large number of recommended plants for this purpose. They are clove bud oil, Eucalyptus leaf oil, Cinnamon leaf oil, *Terminalia chebala*, *Terminalia arjuna*, "Mádama" and "Múnama" bark, "Pila" and salt material. The plant extract has to be obtained by recommended methods and added in correct dosage



in the process of toothpaste manufacture.

According to the label and various advertisements, almost all cosmetic soaps contain one or many plant extracts. Basically soaps are manufactured by reaction of coconut oil, palm oil,



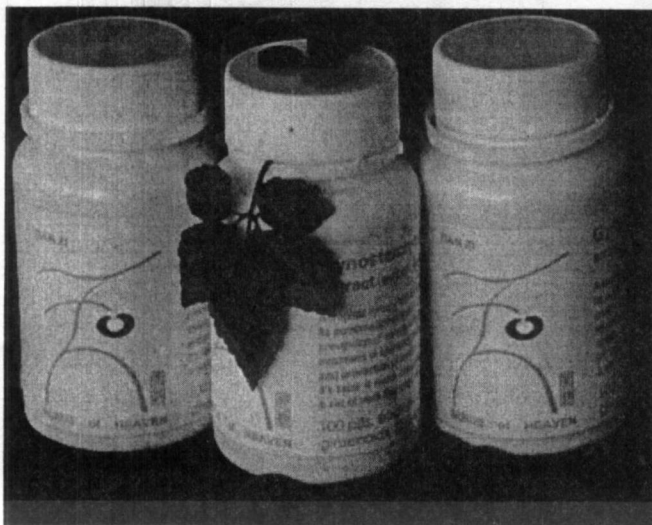
or lard with sodium hydroxide. Scientifically it is a salt, sodium laurate or palmitate. Its basic function is to wash out deposited oil and dirt on the skin and bring about cleanliness. A number of plant materials have been recommended for adding to soap, for the sake of skin care. Some of them are "kokum" bark, Sandalwood oil, Vetiver oil, "Venivel", Jasmine, Neem seed oil, turmeric, "Pathpadagum", and Almond oil. They clarify sweat pores, prevent skin diseases, and bring about a bright and youthful look to the skin. This is the truth if recommend plant material in the correct form is added to soap.



**Ayurveda, Unani, Allopathy and Homeopathy form of medicine have recognized much of the above mentioned plants having definite therapeutic properties. They have been found either in the age old traditional treatment, in various clinical experiments, to have the claimed therapeutic properties. We have no argument about their medicinal properties. Our question is that, whether the manufacturers have used the authentic plants in their preparation? If not whether they have used substitutes for the authentic plant material.**

Now let us consider some facts about shampoos. Basically shampoo is a liquid. The base of a shampoo is sodium lauryl ether sulphate. The basic function of shampoo is to remove oil and dirt from the hair and clean the scalp. Excess removal of hair oil brings a dull look to the hair. Such oil less hair tends to tangle and matted, and uneasy to control. To control such matted hair, chemical called conditioners are added to shampoos. They prevent hair tangling and shacking to each other. Some of the common problems with the hair in untimely fall, graying, loosing luster, hair tangling matted conditions, dandruff, and having head lice.

There are a number of herbal remedies recommended for hair and hair related problems. The whole lime with peel juice, "Veralu" leaf juice, Cassia leaf juice, Fenugreek, Turmeric, "Godapara" fruit juice "Madatiya" leaf juice are some herbal extract recommended in Ayurveda medicine. The chemicals in these herbal extract are capable



of curing most of fall and graying of hair. They bring or restore the lustrous look, and good hair growth, a condition most Sri Lankan women dream to have.

Let me also consider some of the common skin creams and lotions. The base is an emulsion made by mixing water and oil. Lotion and cream when applied on the skin prevents dry skin and wrinkles, and brings a youthful look. In Ayurveda a number of herbal remedies have been recommended. Among them commonly used herbs are sandal wood paste and oil, "Venival", musk, Turmeric, "kokum" bark, and Vetiver oil. These herbal extracts are capable of preventing drying and wrinkles and bring about a healthy and youthful look to the skin. Recently, various advertisements show that Avocado fruit pulp, Gram powder, vegetable extract like cucumber, carrot and certain fruit pulps are also added to skin creams and lotions. They seem to add moisturising properties to the skin.

Any consumer will use a tooth paste, soap or a shampoo only for a few minutes. Within such a short time it is very doubtful whether the active chemical ingredients of the herbal product are absorbed into the body.

In addition to various skin creams, lotion, shampoos and soaps, herbal teas, are now in the market. According to the label such herbal teas contain Cassia leaf and flower, Garciniya ("Goraka"), "Iramusu", "Polpala", Gotukola", and lots of other herbal remedies with vitamins and antioxidant properties.

Now let me consider to the actual fact of herbal based products. The consumers firmly believe that natural herbal extract and components are used in the manufacture of herbal products. They also believe that natural products

have fewer side effects, bring about the expected therapeutics properties.

Therefore, if any manufacturer of such natural product fails to incorporate the label claimed herbals, he is cheating the consumer. This is a punishable offence under law.

There are a large number of herbal medicine products in the market. They claim a large spectrum of therapeutics properties. For example, "Gotukola" products are available as tablet and capsule form. The "Karavila" extracts are dried to a powder and powder is encapsulated. There are certain herbal teas claiming to control obesity. These herbal teas claimed to contain plant material such as "Ranawara", "Belimal", "Ardathoda", "Kuppamenia", "Gotukola" and "Polpala". But the labels do not mention their quantities. It is an open question whether such herbal material is actually found in the tea bag.

Ayurveda, Unani, Allopathy and Homeopathy form of medicine have proved that much of the above mentioned plants having definite therapeutic properties. They have been found either in the age old traditional treatment, in various clinical experiments, to have the claimed therapeutic properties. We have no argument about their medicinal properties. Our question is that, whether the manufacturers have used the authentic plants in their preparation? If not whether they have used substitutes for the authentic plant material.

So far there are no standards specified in Sri Lanka about herbal products. Even in the developed countries, there are no standards specified in this field. If there are any laws specified it is only for a limited number of products. The main reason for this lack of standards is the difficulty of analysing plant extracts. What should be the exact percentage of plant product? Or whether the extraction has been carried out according to set analytical methods? How could one determine whether the said extract is a genuine one? For example "Elabatu" (*Solanum xanthocarpum*) root is recommending plant for most cough and cold remedy preparations. The manufacturer could substitute it with another plant "Wambatu" (*S. surattensee*), a plant which abundantly available. The therapeutic property claiming chemical is also another area that has to be looked about. When a shampoo is considered find that whether there is the actual percentage of plant extract as specified in the label. As a matter of fact, many herbal shampoos do not mention on the label the actual percentage of herbal extract containing in the preparation.

Unfortunately there is no set testing or standard analytical methods set for herbal products. Because of this reason no certain figures could be obtained for accuracy of the analytical results. Thus a herbal extract in the market shampoo could contain one to few grams of the plant extract per kilogram. The manufacture is correct, as the label claims there is some herbal extract in the said shampoo.

In a herbal extract there may be more than one complex chemical. There are complex analytical or testing methods to find out their presence. They can be done only in few, well equipped laboratories. For example take the well known herbal cough product VASAKA, which contains extract from "Adathoda". The active chemical in Vasaka extract is called vasacene. Using the correct analytical method one can tell only the presence or absence of vasacene, not its extract quantity.

"Dasamula Aristaya", a well known health promoting medicinal herbal syrup has extracts from 65 plants. There are no standard methods specific to analyse the active chemicals in "Dasamula Aristaya". Because of this reason the label may claim the product as "Dasamula Aristaya", but the content could be anybody's guess. "Venivel-geta", a well known Ayurveda medicine has a yellow colour. The yellow dye could well deceive its presence. Because of this lack of standards analytical methods, many manufacturers could produce herbal product and deceive the consumer. I have seen certain producers challenging the analytical experts, to prove the absence of certain ingredients in their products. Because of this reason, the consumer has to use herbal product with a certain degree of uncertainty in Sri Lanka.



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## A Closer Look at Ayurvedic Medicine

*In India, about two-thirds of the people in rural areas use traditional medicine, such as Ayurveda, to help meet their primary health care needs*

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Ayurvedic medicine, also called Ayurveda, is a whole medical system that began in India and has evolved there over thousands of years. The word Ayurveda is made up of two Sanskrit words—*ayur*, which means life, and *veda*, which means science or knowledge. Thus, the word Ayurveda means "the science of life."

In the US, Ayurveda is considered complementary and alternative medicine (CAM). Many therapies used in Ayurveda are also used on their own as CAM, such as herbs, massage, and yoga. NCCAM is supporting some research studies on Ayurvedic therapies.

### What Is Ayurveda?

Ayurveda is a whole medical system that is based on various theories about health and illness and on ways to prevent, manage, or treat health problems. The aim in Ayurveda is to integrate and balance the body, mind, and spirit. This is believed to help prevent illness and promote wellness. Ayurveda also has treatments for specific health problems.

Ayurveda is based on ideas from Hinduism, one of the world's oldest and largest religions, and ancient Persian beliefs. In India, Ayurveda has long been the main system of health care, although conventional (Western) medicine is becoming more common there, especially in urban areas.

Ayurveda and variations of it have been practiced for centuries in some other countries as well.

### Looking at Health and Disease

Ayurveda has some basic beliefs about health and disease that might be described as follows:

\* People, their health, and the universe are all related. Health problems can result when these relationships are not in balance.

\* A person's constitution is called his *prakriti*. The *prakriti* is thought to be a unique combination of physical and psychological characteristics and the way the body functions. Three qualities called *doshas* form important aspects of the constitution and control the activities of the body. They are known as *vata*, *pitta*, and *kapha* in Sanskrit.

\* Every person has a unique balance of *doshas*, with one usually the most prominent. Each *dosh*a tends to correspond with a certain body type and personality type, and a greater chance for certain types of health problems.

\* An imbalance in a *dosh*a can be caused by an unhealthy lifestyle or diet, too much or too little mental and physical activity, or not being properly protected from the weather, chemicals, or germs.

\* In Ayurveda, health and disease are believed to be related to the way a person's *dosh*as are balanced, the state of his physical body, and mental or lifestyle factors.

### Ayurvedic Treatment

In working with patients, an Ayurvedic practitioner uses various techniques, including questioning, observation, touch, advising, a treatment plan, and specific therapies. Patients are expected to be active participants in their treatment, because changes in diet, lifestyle, and habits are often required.