

## MEDICINAL PLANTS IN THE VALLEY AND POTENTIAL EFFECTS

Mala Bhasin\*

### ABSTACT

Medicinal plants have been identified and used throughout human history. The valley of Kashmir is very rich in high value and high altitude aromatic and medicinal plants. More than 50 % of plant species described in British pharmacopoeia are reported to grow in Kashmir Valley. Near 570 plant species are reported to be of medicinal importance. But some of the mentioned plant species differentiates us from the rest of the world and which can cure most dreadful diseases if properly utilized like *Lavendula Angustifolia*, *Virkum* and *Podopryllum Emodi*. Many herbs have shown positive results in-vitro, animal model or small-scale clinical tests. The bottom line is that herbs are medicines, and like other medications, they have some advantages and disadvantages and Quality value is required to be given to this area.

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\* Asstt. Prof. Deptt. of Botany, Govt. Degree College, R S Pura, Jammu, J&K

## INTRODUCTION:

Plants have the ability to synthesize a wide variety of chemical compounds that are used to perform important biological functions, and to defend against attack from predators such as insects, fungi and herbivorous mammals. At least 12,000 such compounds have been isolated so far; a number estimated to be less than 10% of the total. Chemical compounds in plants mediate their effects on the human body through processes identical to those already well understood for the chemical compounds in conventional drugs; thus herbal medicines do not differ greatly from conventional drugs in terms of how they work. This enables herbal medicines to be as effective as conventional medicines, but also gives them the same potential to cause harmful side effects.

Kashmir valley has a great potential for establishing pharmaceutical and essential oil industry based on these high value plant species. Prominent among the aroma bearing plants are Lavender, Rose, Clarysage, Peppermint, Rosemary, *Artemisia annua*, *Tagetes minuta* and Geranium oils. The essential oils derived from these plants form the backbone of perfumery, cosmetic industry. These oils rank among the top ten essential oils used in aromatherapy throughout the world. The use of plants as medicine predates written human history. Many of the herbs and spices used by humans to season food also yield useful medicinal compounds. The use of herbs and spices in cuisine developed in part as a response to the threat of food-borne pathogens. Studies show that in tropical climates where pathogens are the most abundant, recipes are the most highly spiced. Further, the spices with the most potent antimicrobial activity tend to be selected

Nearly 50 per cent of the plant species described in British pharmacopoeia are reported to grow in Kashmir valley. Till date more than 5000 aromatic/medical plants have been discovered in Jammu and Kashmir. Scientific observations reveal that the state could become the superpower in future for the herbal medicines and perfumes if the huge resources are exploited properly and effectively.

Aromatherapy is gaining laurels the world over with Kashmir Lavander being the crown in the world of aroma. How many people know the world's best aroma is produced in Gulmarg? Rose

of Tangmarg (*Rosa domescena*) is the best rose in the world. This rose is resistant to all diseases and as such is the craze for aromatic industries.

But the question that strikes to one's mind is – where do we stand in the field of medicines? Why we have been failing in their proper utilization? Can we generate state economy from our green gold? Vast tracts of forest land has been cleared for agriculture, developmental projects, mining, monoculture plantations, etc. On a global scale, it is estimated that we are losing 200 sq. km of forest each day. The days are not far when these plants will be the tale of past.

Here are some of the plant species that differentiates us from the rest of the world and which can cure most dreadful diseases if properly utilized:

**LAVENDER OIL** (*Lavendula Angustifolia* or *lavendula affinalis*):- Growing in high lands of Kashmir is steam distilled from flowering tips. Cherished and keenly sought for perfumery, skin care and hair care. One kilogram of lavender costs Rs 300 in local market whereas the same can fetch Rs 60000 to 70000 in the European market.

**VIRKUM**:- This plant is found commonly near Srinagar-Tragbal and other areas like Pattan and Tangmarg. Its golden yellow flowers are the earliest ones to blossom in spring in Kashmir. Colehicles, a well-known remedy for gout and rheumatism is extracted from this plant.

**TETHWAN**:- It is a white hoary shrub abundant in Kashmir. Santonin extracted from the plant is used as vermicide. The juice extracted from this plant can also balance the blood sugar level.

**KUTH**:- Kashmirja, is used as an aromatic, stimulant, as a medicine for canga, asthma, fever, dyspepsia and skin diseases. Kuth root when pounded and mixed bassanum oil is applied to a rheumatic limb.

**VANWAGAM** (*Podopryllum Emodi*):- I found growing all over Kashmir especially in fir forests of Gulmarg and Gurez valley. The root of the plant yields *Podophyllum* resin, which is very popular in modern medicine.

**Marigold** (*Tagetus minuta*): It is native to South America and has spread throughout the world. South Africa, Nigeria, India, Kenya, Brazil, France, Argentina are the main *Tagetus* oil producing countries. In India it grows in Western Himalayas between altitudes of 1000-2500m. In India Himachal Pradesh, J&K State and Hilly areas of U.P are the main growing areas. The oil is a valuable commercial product largely used in blending high grade perfumes. The herb is also

used as stomachic, carminative, diuretic and diaphoretic. Major Constituents reported from the steam distilled oil cultivated in IIIM farms at Pulwama are (Z)  $\beta$  ocimene(38.72 %), dihydro tagetone (9.07 %) (Z) tagetone (7 %), (Z) ocimenone (7 %) and (E ) ocimenone (13%) and minor acyclic monoterpenes like 3 ,7- dimethyloct-1-en-6-one and 3,7-dimethyl-5-hydroxyoct-1-en-6-one and 3,7-dimethyl oct-1, 7-dien-6-one. Concentrations of these constitutes vary with the maturity of the plant. The oil gets easily polymerized within 4 to 5 months of its distillation due to these acyclic ketones and should be stored in amber colored bottles. They should be filled upto brim and protected from the heat and light. The oil is used in the treatment of foot diseases. The oil also exhibits bronchodilatory, tranquilising. Hypertensive, spasmolytic and anti inflammatory activities.

Peppermint (*Mentha piperita*):Mints have played an important part in human society for a long period. There are 30 species of mint and all species of the Genus *Mentha* are aromatic. Total world production of peppermint oil is 4000 tons and India's share is 300 tons only. Peppermint oil is largely used as a flavouring agent for confectionary and liquors as well as for both pastes and mouth washes. It is also used in easing intestinal irritation. The oil has pleasant cooling properties and muscle relaxing properties. Peppermint extracts have shown to have antiviral activity. The oil is traditionally used in connection with arthritis, asthma, bad breath, bronchitis, fatigue, fevers, headaches, nausea and travel sickness. Major constituents reported from Kashmir oil are  $\alpha$ -pinene (1.4%),  $\beta$ -pinene (1.8%), limonene (2.5%), 1,8-cineole (7.5%), menthone (18.0%), menthol (40.0%) and menthyl acetate (3,.6%). It is found out that about 650 plant species are being used as medicine in one or other form in Kashmir Himalaya. However, over the decades, a large number of these species have been rendered threatened due to various anthropogenic as well as natural threats.

#### INFLUNCING EFFECTS:

In 2002, the U.S. National Center for Complementary and Alternative Medicine of the National Institutes of Health began funding clinical trials into the effectiveness of herbal medicine. In a 2010 survey of 1000 plants, 356 had clinical trials published evaluating their "pharmacological activities and therapeutic applications" while 12% of the plants, although available in the

Western market, had "no substantial studies" of their properties. Herbalism is also known as botanical medicine, medical herbalism, herbal medicine, herbology, herblore, and phytotherapy. It refers to using a plant's seeds, berries, roots, leaves, bark or flowers for medicinal purposes. With the growing interest in health and wellness, alternative medicines are becoming increasingly popular worldwide. Also, with the increasing prices of prescription medicine, herbal medicines are often cheaper than their conventional medicine counterparts.

In addition, a growing body of scientific research shows that herbal medicines can be highly effective for certain diseases and conditions. Moreover, as research in this area increases, the optimum doses for herbal medicines are known to ever greater accuracy.

#### BENEFITS:

Using medicinal herbs can sometimes be better than using medical drugs. Here are some reasons why medicinal herbs are better.

1. They cost less – the rising cost of prescription drugs have led the people to look for alternatives. While medicinal herbs may not be as strong or as fast acting as conventional medicine, there is a growing body of scientific evidence that shows their efficacy and in what doses.
2. They may have fewer side effects: while the side effects of any herbal medication depend on the drug in question, many have fewer side effects than conventional medicine. For example, St. John's Wort, which is used for mild to moderate depression, has fewer side effects than most other prescriptive antidepressants.
3. There is a choice on how to use them – medicinal herbs can be used in a variety of ways, depending on the kind of herb that is to be used. Some herbs can be mixed with food. Some can be made into tea, and there are some that are available in capsule or tablet form.
4. They are good for more than one condition – most prescriptive drugs are designed for one specific health problem. By contrast, many herbal medicine act on several parts of the body at once. For example Ginko (Ginko biloba) is good for circulatory disorders, but it also helps enhance memory.
5. Cardiovascular diseases- there are a variety of medicinal herbs that can address cardiovascular problems. Medicinal herbs like garlic are said to be beneficial for many health

problems like lowering the blood pressure and cholesterol to prevent cardiovascular problems. Kelp is a known reducer of heart problems, and alfalfa can be used to prevent and treat cardiovascular problems like heart disease and stroke.

6. Digestive problems – there are also many medicinal herbs that can be used to treat and prevent problems with digestion like ulcers, diarrhea, constipation, and others. Some medicinal herbs that can be used for problems in the digestive system include caraway, chicory, clove, ginger, red pepper, rosemary, and others.

7. Respiratory Problems – there are different varieties of medicinal herbs that can be used for respiratory problems like asthma, bronchitis, and others. Some medicinal herbs that can be used for respiratory problems like ginkgo can help people with asthma. Horehound is known for being an expectorant and is used to treat coughs. Dandelion can be used by people with bronchitis. Eucalyptus is popularly known to be good for loosening the phlegm and making it easier to breathe. Thyme can be used as a cough remedy, and there are more medicinal herbs that can be used for different respiratory problems.

8. Skin problems – some medicinal herbs can be made into creams and salves, which can be used to treat many skin problems like psoriasis, acne, burns, rashes, and others. Some medicinal herbs that can help with skin conditions are allspice, aloe, basil, mint, and turmeric.

9. Cancers – there some medicinal herbs that can help in preventing and slowing down the growth of certain cancer cells in the body. Dandelion and garlic are an example of herbs that can help in preventing cancer. Fennel and anise are said to be good at fighting the development of prostate cancer. It is said that ginseng can help patients who are undergoing radiation therapy for cancer.

The bottom line is that herbs are medicines, and like other medications, they have some advantages and disadvantages. Visiting a physician for the correct diagnosis, consulting an herbalist for the proper herb and dosage, and embracing modern medicine when it makes the most practical sense may be the best of all possible worlds for those who wish to use alternative and complementary therapies.

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