

Herbal Spices: A Review

Shinde K.G.¹, Bhalekar M.N.² and Magar V.G.³

¹Associate Professor, Department of Horticulture, MPKV, Rahuri, (M.S.)

²Senior Vegetable Breeder, Department of Horticulture, MPKV, Rahuri, (M.S.)

³Assistant Professor, CSMSS, College of Agriculture, Kanchanwadi, Aurangabad (M.S.)

SUMMARY

Herbs in general are succulent plants. These are annual, biennial and perennial herbs. Based on the use, they are also broadly grouped into culinary, cosmetic and pharmaceutical. The Mediterranean areas including North Africa and the Middle East are considered the centres of origin of most of the herbal spices and are naturalized into other parts of the world. A host of variables are discernible among herbs. They are very succulent like parsley, celery, bulbous like leek, chives, root tuber like horse radish, hardy shrub like rosemary.

INTRODUCTION

Most of the herbal spices are relatively tolerant plants to water stress and pest attack. Herbs are probably the most widely grown plants in the world today. Cultivation of herbs is much like the cultivation of other plants.

Basil

Ocimum is a genus of aromatic annual and perennial herbs and shrubs in the family Lamiaceae. It is native to the tropical and warm temperate regions of all 6 inhabited continents, with the greatest number of species in Africa. It is the genus of basil and the name is from the Ancient Greek word for basil. It's best known species are the cooking herb cooking basil, *Ocimum basilicum* and the medicinal herb tulsi (holy basil), *Ocimum tenuiflorum*. Most culinary and ornamental basils are cultivars of *Ocimum basilicum* and there are many hybrids between species.



Basil is a tap rooted tender annual herb. The cultivated types are 'Sweet' 'Comoros'. Basil is to be cultivated in a well drained fertile loamy soil in warm wind sheltered sunny areas. It is propagated through seeds. The seed rate is about 2kg/ha. The germination occurs after 10-14 days and the seedlings are to be pinched to check flowering and to ensure a spreading bushy habit. The plants require relatively large quantities of nitrogen (80kg at sowing, 60kg during growth period and 60 after each cutting), 100kg of P₂O₅ and 100kg K₂O kg/ha. The yield is estimated to be about 13-14 tonnes of herbage per hectare. Harvesting can be started three months after planting and should be before the flowers appear. Quick drying should be allowed by spreading in shady places on wire mesh. Oven drying is not satisfactory since the leaves, which are easily bruised, get scorched. When dried, the leaves turn brownish-green, whole and broken, brittle, curled or folded together. Dried leaves and tender four

sided stems of this plant are used as a spice for flavouring and to recover essential oil. The quality of dried basil can be preserved for two years in air-tight packages at room temperature. Plant yields 0.15% oil on steam distillation, the main constituents being estragol, eugenol, lineol and linalol.

Mint and pepper mint (*Mentha arvensis* L. and *M. piperita* L.)

Mints are the best known herbs. They are indigenous to Mediterranean region and Europe. They are hardy and perennial and have rhizomes and stolons which are formed on maturity. *Mentha piperita*, *M. viridis* (*Mentha spicata*) or spear mints and *M. arvensis* are the main species cultivated. Mint and peppermint can be successfully cultivated in deep loam soils rich in organic matter having a pH of 6-7. The soil should be well drained with good water-holding capacity as water stagnation is not good for the plants. They can be grown either in the open or in partial shaded conditions and require weeding in the early periods of growth. As these herbs rarely produce seeds, propagation is done mainly by divisions of stolons or easily through rooted cuttings. They are laid end to end in furrows, 5cm deep and 60cm apart and covered with soil. Mint consumes lot of potassium. Fertilizers containing 150 : 100: 80kgs of K₂O, P₂O₅ and nitrogen per hectare recommended. In the first year the rows retain their identity and subsequently the plants will spread over the field. Replanting is necessary after four to five years of growth. Depending on age, soil fertility etc., the yield varies from 5-15 tonnes/ha. In *M. piperita* rust (*Puccinia menthae*), blight (*Rhizoctonia solani*), Leaf spot (*Fusarium oxysporum*) and viral diseases are reported. *F. oxysporum* is the major disease of *M. arvensis*.



Mentha piperita



Mentha arvensis

Mint and peppermint are mainly cultivated for their essential oils which is around 0.5%. Menthol is the chief constituent of essential oil. As a fresh herb, leaves are stripped whenever required. The whole shoots are cut and made into bundles for marketing. The shoots are cut as close to the ground as possible, freshly cut herb is left in the field for 2-4 hours during sunny weather and this dried herbage is further dried in small bundles in shade till its weight gets reduced to 1/3-1/4 of its original, taking care that the leaves do not get crisp. The crop should not be heaped for drying in the sun as it is reported to result in reduction of oil yield by 20-25%. Essential oil is extracted by steam distillation.

Sage (*Salvia officinalis* L.) (Family : Lamiaceae)

Sage is native to the Mediterranean shores. Three sub species are commercially important- *S. officinalis* ssp. major (Dalmatian), *lavandulifolia* (Spanish) and *triloba* (Gree). It is an evergreen sub-shrub and reaches an average height of one metre. The tap root is branched and woody and from which square stem develops with a number of whitish-wooly haired small branches. The leaves are opposite and elliptic. They are pale-green in

colour when they first appear and later become soft silvery-grey at the top and whitish at underneath. The flowers are in whorls. The fruit is an ovoid, four sectioned nutlet. Better performance is obtained if it is cultivated in well drained calcareous soil under full sunlight conditions. It is seen to suffer hard winters by losing leaves but grow again in spring. Sage is propagated from seed. They are to be sown in prepared seed box and when seedlings reach to a height of about 20cm they can be planted in the field leaving 60cm between plants. Fertilization is similar to thyme but after the first cutting, 50kgs of supplementary nitrogen should be added. Powdery mildew (*Erysiphe polygonii*) and wilt (*Rhizoctonia solani*) are the major diseases. The first year yield is very low and in the second and subsequent years an yield of 1.7-2.3tonnes/ha of dried leaves can be expected. Top 20cm of growth is cut just before flower spikes are produced. Careful shade drying should be practised for 6-7 days to preserve volatile oil and normal green colour of the leaves. The dried leaves should be stored in air-tight containers. Sage will not reabsorb moisture after drying.



Salvia officinalis



Thymus vulgaris

Thyme (*Thymus vulgaris*) (Family: Lamiaceae (Labiatae))

Thyme is indigenous to Mediterranean lands. Apart from one hundred known varieties, many hybrids are also available. They grow to 15-40cm, and have very greyish-green leaves which are joined to thin stalks projecting in an angular fashion from hard woody stem that forms an erect, bushy plant. It does not thrive well in soils that are too wet or rich. It can be propagated by seeds or cuttings. The seedlings are to be thinned later to about 15cm between plants. The transplanting may be done carefully as it resents root divisions. Cuttings of 10cm long may be taken up for planting in late spring and kept in a pot of good potting mixture and watered. Once roots are formed, they can be planted in the field 90 x 30cm apart. A fertilizer dose of 100:100:100 kg/ha is recommended. The leaves can vary in shape from elliptic to linear to diamond-shaped towards the apex. The fibrous roots are fairly robust and woody. The flowers appear in whorls at the ups of branches and are pinkish-white. The fruit of thyme consists of a smooth, dark-coloured four sections nutlet. Thyme needs to be replanted after every three years or so that they become woody with age and start to die down. Two to three harvests can be made every year and the yield ranges from 1-1.5 tonnes/ha. Some cultivars are prone to damage caused by pests like *Empoasca vitis*, *Cassica* sp. etc Thyme is affected by *Rhizoctonia solani* causing wilt of the plant. Thyme is used both as fresh, dried whole and grounded forms, it contains essential oil 1% Thymol, a phenol, is the major constituent of this essential oil. The herbage is gathered when plants are in full bloom. Flowering tops are dipped together with parts of leafy stem. It is then shade-dried to preserve the greyish-green colour. The dried leaves are curled and usually not longer than 6-7mm.

REFERENCES

Thamburaj S. and Singh N., (2001). Textbook of Vegetables, Tubercrops and Spices, Directorate of Information and Publications of Agriculture Indian Council of Agricultural Research New Delhi.

<https://en.wikipedia.org/wiki/Basil>