Senna alexandrina Mill.

Synonym: *Senna angustifolia* (Vahl) Batka; *Cassia angustifolia* Vahl, *Cassia acutifolia* Delile, *Cassia senna* L.; *Senna acutifolia* (Delile) Batka

Family: Leguminosae

Ayurvedic Name: Swarnapatri

Hindi Name: Senna, Senai, Sonmukhi

Trade Name: Senna

Habit: Shrub

Part Used: Leaves & pods

Active Ingredient: Sennosides, Aloe Emodin, Pinitol, Salicylic acid

Biological activity: Immunity Booster, Antibiotic, Anthelminitic, Antianxiety, Antibacterial, Anticancer, Antidysenteric, Antifungal, Antipyretic, Antiviral, Aperitive, Appetizer, blood purifier, Depurative, Diuretic, Febrifuge, Liver tonic, Narcotic etc.

Traditional and Therapeutic use: Senna is a powerful cathartic used in the treatment of constipation, gonorrhea, skin diseases, dyspepsia, fevers and hemorrhoids, as an expectorant, a wound dressing, an antidysenteric and a carminative agent. The herb is used in the form of crude plant material or powder as oral infusion or extracts. It is always advised to use the drug under the supervision of Physician, because the excess use of senna may have adverse effect leading to sudden and intense stomach pains and colic or abdominal pains.

Morphological and floral characteristics: Senna consists of dried leaves of a small shrub, 60-75 cm high, found throughout the year, cultivated largely in Southern India, especially in districts of Tinnevelly, Madurai and Tiruchirapally and has also been introduced in Mysore, fully grown, thick bluish colour leaves stripped off by hand, collected and dried in shade for 7-10 days, till assume a yellowish-green colour, graded and then packed into large bales.

Distribution: The plant is found growing in a wild state in certain coastal parts of Gujarat especially in the Bhuj region of India.

Varieties: ALFT-2, Sona, and Tinneyvelly senna

Climate and Soil: Senna is a warmth loving crop and require bright sunshine for its successful growth. It can be grown as an early summer (February - March) or a winter (October - November) crop. The crop can thrive on a variety of soils, but is largely grown on red loams, on alluvial loams. The texture of the soil which account for the major hectarage under Senna crop varies from sandy loam to loam, while the black cotton soils are heavier and more fertile. The average pH ranges from 7 to 8.5. It is very sensitive to water logging. Hence, grown only on well-drained soils.

Main field plantation

Land preparation: The land is ploughed deep and the soil is exposed to sun for 110-115 days to dry out roots of perennial weeds followed by two cross ploughing harrowing and levelling. FYM is incorporated into the soil at the time of final cross ploughing. Then the land is laid out into plots of convenient size with irrigation channels.

Transplanting and optimum spacing: Seeds are directly sown into the field. Seeds are pretreated with antifungal agent like Thiram. The spacing between the plants should be 30cm x 30cm.

Fertilizers: Organic manures like, Farm Yard Manure (FYM), Vermi-Compost, Green Manure etc. may be used as per requirement of the species.

Weed control: The first weeding cum hoeing is done at 25-30 days of sowing, a second at 75-80 days and a third at 110 days to keep the crop free from weeds. Use of Teeflan herbicide as pre-emergent spray at the rate of 4 kg/ha has been reported to increase the yield and anthraquinone content.

Irrigation: Senna could be economically grown under rainfed conditions. In most years, the crop needs no irrigations except under the conditions of prolonged drought. However, when it is grown as a semi-irrigated crop, the yield increased considerably. About 58 light irrigations are enough to raise a good crop of Senna, however, heavy irrigations are injurious to the crop.

Diseases and pest control: To prevent diseases, bio-pesticides could be prepared (either single or mixture) from Neem (kernel, seeds & leaves), Chitrakmool, Dhatura, Cow's urine etc.

Crop maturity and harvesting: Senna plant produces foliage containing higher sennosides between 5-90 days age, depending upon the total plant growth. The picking of leaves is done by hand so that most of the growing tops are removed at harvest this also induces the plants to produce more of branching which otherwise reduce foliage growth considerably. A second picking is taken at 90-100 days and the third picking between 130-150 days when the entire plants are removed so that the harvested material includes both leaves and pods together.

Post-harvest management: The harvested crop should be spread in a thin layer in an open field to reduce its moisture. Further drying of produce is done in well-ventilated drying sheds. It takes 10-12 days to dry completely in well-ventilated drying sheds. The dryed leaves and pods should have light green to greenish yellow colour. A rapid mechanical drying at 40℃ could also be attempted. The produce is baled under hydraulic pressure and wrapped in gunny bags, for export.

Yield: A good crop can give 1500 kg of dry leaves and 700 kg of pods per hectare under irrigated and good management conditions. The yield under rainfed conditions is about 800 - 1200 kg of leaves and 350 - 400 kg of pods per hectare.