Phytochemical Investigation and Anthelmintic Screening of Stem Bark of *Bauhinia variegata* (Linn.) and Fruit of *Benincasa hispida* (Thunb.)

1. **INTRODUCTION**

1.1 **Herbal drugs and evaluation of herbal drug**

Helminthiasis is a disease in which a part of the body is infested with worms such as pinworm, roundworm or tapeworm. Typically, the worms reside in the gastrointestinal tract but may also burrow into the liver and other organs. (wikipedia)

Infected people excrete helminth eggs in their faeces, which then contaminate the soil in areas with inadequate sanitation. Other people can then be infected by ingesting eggs or larvae in contaminated food, or through penetration of the skin by infective larvae in the soil (hookworms). Infestation can cause morbidity, and sometimes death, by compromising nutritional status, affecting cognitive processes, inducing tissue reactions, such as granuloma, and provoking intestinal obstruction or rectal prolapse. Control of helminthiasis is based on drug treatment, improved sanitation and health education. (WHO, 2009)

Considerable research has shown that some plants not only add to the nutrition of animals, but also have anti-parasitic effects. (Waghorn G.C. et al., 2003) For example, oil of Chenopodium (frequently combined with a laxative) derived from *Chenopodium ambrosioides* (De Bairacli L. J., 1991), was used for many years in the UK and US to treat nematode parasite infections (*Strongylus, Parascaris* and *Ascaris* sp.) in monogastric animals including humans (Gibson T.E., 1965). Male fern *Dryopteris filix-mas* was used against the cestode *Moniezia* sp., the nematode *Ascaridia* sp., as well as other gastro intestinal nematodes of ruminants such as *Cooperia, Haemonchus, Nematodirus, Ostertagia* and *Trichostrongylus* sp.

Besides these plants there are also many plants available which are traditionally be used as anti-parasitic but not evaluated scientifically. The plants from Satpuda ranges used by
folklorist as anthelmintic are Bauhinia variegata, Benincasa hispida, Mucuna prurience, Erythrina indica, Morianga concanensis, Aegle marmelos, Casalpina cristita, Cucurbita maxima, Menthe viridis and Cassia fistula. (Marie D’souza, 1998)

The present study is an attempt to explore traditionally used herbal medicines from Satpuda region for anthelmintic activity.

1.2 PLANTS PROFILES:

I. *Bauhinia variegata* (Caesalpiniaceae) (Linn.) Benth:

**Synonym:** Mountain Ebony (English), Rakta kanchan (Marathi), Kachnar (Hindi)

**Description:** *Bauhinia variegata* Linn. is a medium-sized, deciduous tree, found throughout India, ascending to an altitude up to 1800m in Himalayas. Bark is grey with longitudinal cracks, pale pink inside. Leaves are rather broader than deep, rigidly sub-coriaceous, deeply cordate with two leaflets, connate for about two-thirds up, leaflets are ovate, rounded at apex, 10-15cm long, pubescent beneath when young. Flowers are variously colored, in few-flowered, lateral, sessile or short peduncled corymbbs, the uppermost petal darker and variegated usually appearing before the leaves in short axillary or terminal racemes, stamens 5, staminodes absent, fruits flat; hard glabrous dehiscent pods, 10-15 seeded. (The Wealth of India, 1959), (Indian Medicinal Plants, 1994)

**Medicinal uses:** The bark is astringent, tonic and anthelmintic. It is also used for ulcers and leprosy. A decoction of the bark is taken for dysentery. It is used to give tone and vitality to body. It is used against tuberculosis and skin ailments.

II. *Benincasa hispida* (Cucurbitaceae) (Thunb.) Cogn.

**Synonym:** White gourd melon (English), Dudhi (Marathi), Petha (Hindi) (Indian Medicinal Plants, 2002)

**Description:** The plant is probably a native of Malaysia, now found throughout the tropics. It is cultivated in India, Burma and Ceylon, and on the hills up to 4,000’. A large trailing gourd climbing by means of tendrils; leaves large, hispid beneath; flowers yellow, unisexual, male peduncle 7.5-10cm long, female peduncle shorter; fruits broadly cylindric 30-45cm long, hairy

**Medicinal uses:** The fruits are sweet, cooling, styptic, laxative, diuretic, tonic, aphrodisiac and antiperiodic. They are useful in asthma, cough, diabetes, haemoptysis, hemorrhages from internal organs, epilepsy, fever and vitiated conditions of pitta. The seeds are sweet, cooling and anthelmintic, and are useful in dry cough, fever, urethrorrhea, syphilis, hyperdipsia and vitiated conditions of pitta. (Indian Medicinal Plants, 2002), (Keyon H.L. et al., 2005)

1.3 **Rationale of Herbal Medicine**

The traditional herbal medicine are popular over allopathic medicine because of the reasons such as: Rising costs of medical care, As these are from natural origin, Devoid of serious from side effects, Goes to root cause and removes it, so that the disease does not occur again, Cure from many obstinate disease, Easy availability of drugs from natural sources.