IN VITRO ANTHELMINTIC ACTIVITY OF WHOLE PLANT EXTRACTS OF HYPTIS SUAVEOLENS POIT

PRAVEEN S. NAYAK*1, SHWETA NAYAK1, DM KAR2, P. DAS1

1GRY Institute of Pharmacy Borawan, Khargone M.P, 2School of Pharmaceutical Sciences SOA University, Bhubaneswar
E mail: praveen_nayak2000@yahoo.com
Received 16 Dec 2009, Revised and Accepted 04 Jan 2010

ABSTRACT
The plant Hyptis suaveolens poit commonly known as Wilayati tulsi belongs to the family Lamiaceae and is an ethnobotanically important medicinal plant. The plant has been considered as an obnoxious weed, distributed throughout the tropics and subtropics. Almost all parts of this plant are being used in traditional medicine to treat various diseases. The leaves of H. suaveolens have been utilized as a stimulant, carminative, sudorific, galactagogue and as a cure for parasitic cutaneous diseases. Hyptis suaveolens (L.) Poit. Is a plat belonging to family Lamiaceae, or the Mint family. It is a family of plants of about 210 genera and some 3,500 species. The original family name is Labiatae, so given because the flowers typically have petals fused into an upper lip and a lower lip. Although this is still considered an acceptable alternate name, most botanists now use the name “Lamiaceae” in referring to this family. They are herbs or undershrubs, distributed over both hemispheres and includes a number of medicinal and sub-medicinal plants of great value.

INTRODUCTION
The plant, Hyptis suaveolens (L.) Poit commonly known as Wilayati tulsi belongs to the family Lamiaceae and is an ethnobotanically important medicinal plant. The plant has been considered as an obnoxious weed, distributed throughout the tropics and subtropics. Almost all parts of this plant are being used in traditional medicine to treat various diseases. The leaves of H. suaveolens have been utilized as a stimulant, carminative, sudorific, galactagogue and as a cure for parasitic cutaneous diseases. Hyptis suaveolens (L.) Poit. Is a plat belonging to family Lamiaceae, or the Mint family. It is a family of plants of about 210 genera and some 3,500 species. The original family name is Labiatae, so given because the flowers typically have petals fused into an upper lip and a lower lip. Although this is still considered an acceptable alternate name, most botanists now use the name “Lamiaceae” in referring to this family. They are herbs or undershrubs, distributed over both hemispheres and includes a number of medicinal and sub-medicinal plants of great value.

Hyptis suaveolens is used traditionally for the treatment of respiratory tract infections, colds, pain, fever, cramps and skin diseases. The aerial parts have yielded the ring Acontracted triterpenoid hyptadienic acid. An acidic polysaccharide has been reported from the seed-coat mucilage. The wide variety of essential oils isolated from the leaves have been extensively investigated for antifungal, antibacterial and anticonvulsant activities.

MATERIAL AND METHODS

Plant collection and identification
The flowering whole plants were collected from the fields around the road side area of Maheshwar, distt Khargone M.P. India, during the months of September - October and the identification of plant was done by Prof. P. Patidar, Govt P.G College, Botany department Khargone M.P. India. A specimen was voucher, and deposited at GRY Institute of Pharmacy, Borawan Khargon M.P. India

Extraction
Fresh plant, after collection was shade dried, defatted with hexane and then extracted with ethanol by Soxhlet apparatus. Aqueous extract were obtained by maceration for 24 hours.

Experiment
Alcohol and aqueous extracts of the whole plant of hyptis suaveolens were investigated for their anthelmintic activity against Pheretima posthuma and Ascardia galli. Various concentrations (10-100 mg/ml) of each extract were tested in the bioassay, which involved determination of time of paralysis and time of death of the worms. Both the extracts exhibited significant anthelmintic activity at highest concentration of 100 mg/ml. Piperazine citrate in same concentration as that of extract was included as standard reference and distilled water as control. The anthelmintic activity of alcohol and aqueous extracts of Hyptis suaveolens has therefore been demonstrated for the first time.

Keywords: Anthelmintic Activity, Ascardia Galli, Hyptis suaveolens, Pheretima Posthuma.

RESULTS AND DISCUSSION
Preliminary phytochemical screening of alcoholic extract revealed the presence of anthraquinone glycosides, phenolic compounds and steroids while aqueous extract showed presence of glycosides and phenolic compounds. From the results shown in table no. 1, the predominant effect of piperazine citrate on the worm is to cause a flaccid paralysis that result in expulsion of the worm by peristalsis. Piperazine citrate by increasing chloride ion conductance of worm muscle membrane produces hyperpolarisation and reduced excitability that leads to muscle relaxation and flaccid paralysis.
The alcoholic extract of *Hypitis suaveolens* demonstrated paralysis as well as death of worms in a less time as compared to piperazine citrate especially at higher concentration of 100 mg/ml. While water extract also shown significant activity. Phytochemical analysis of the crude extracts revealed presence of flavonoids as one of the chemical constituent. Polyphenolic compounds show anthelmintic activity. Some synthetic phenolic anthelmintics e.g. niclosamide, oxyclozanide and bithionol are shown to interfere with energy generation in helminth parasites by uncoupling oxidative phosphorylation. It is possible that phenolic content in the extracts of *Hypitis suaveolens* produced similar effects.

**REFERENCES**