Evaluation of Anthelmintic Activity of Some Herbal Drugs

1. INTRODUCTION:

1.1 Helmenthiasis;

A disease manifested by invasion of helminthes i.e. worms. The most common helminthes which parasitized man are Tape worm (cestodes), roundworm (nematodes) and flukes (tramatodes). (Stedman's Medical Spellchecker, 2006). The invasion of these worms does not produce the life threatening condition but surely affecting the normal lifestyle of the people. 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. (WHO2009)

The current status of disease shows an uneven distribution around the world. In developing countries, the affected population is 25-33% (Bratton and Nesse, 1993) whereas in developed ones it is less than 1.5% (WHO, 2009). Thus it is a problem that mostly concerns developing countries, particularly in regions where poverty and poor sanitary conditions are dominant; under these conditions helmenthiasis incidence rates reach 90% (Bratton and Nesse, 1993). The major contributors are people from the under developed or developing countries and share of developed countries are limited but cannot be considered that negligible. Helmenthiasis, or a subtype of Helminthiasis, affects less than 200,000 people in the US population (National Institutes of Health (NIH)).

Treatment options available for Helminthiasis are limited and includes (F.S.K. Barar 2000)

1. Piperazin derivatives : Piperazin citrate, DiethylCarbamazine,
2. Quinoline and isoqunolines: Emitine , Praziquentals, Oxaminiquine, etc
3. Anti-protozoals : Metranidazol, Mebendazole, Thiabendazoles
Thorough analysis has revealed that agents used for treatment of helmenthiasis very few. The most acceptable molecules are anti-protozoal Agents which are not true anthelmintics, The current cineraria demand some new agents or alternatives for Helmenthiasis treatment.

The present study is small attempt to explore well-recorded and traditionally well-practiced knowledge of herbal medicines from Satpuda region of Khandesh for anthelmintic potential.

1.2 Plant profile:

1. Punica granatum : (Punicaceae)
   
   Synonym- Pomigranate,
   
   Local Name - Dalimb, Anar.
   
   Habitat, - Naturally growing wild in the Balkans, in the Eastern Mediterranean in the Middle-East; and in North-West India,

   Description- Deciduous small tree, to 6 m tall, sometimes spiny. Leaves are opposite, oblong - lanceolate, 7 cm long, entire, glabrous, glossy. Flowers are bisexual, to 4 cm across, solitary or clustered at ends of branchlets, Fruit is globose, 2-3 inch in diameter, and shiny reddish or yellowish green when mature. It has a persistent calyx opposite the stem end that looks like a little crown. The fruit is technically a berry. It is filled with crunchy seeds each of which is encased in a juicy, somewhat acidic pulp that is itself enclosed in a membranous skin. The seeds, juice and pulp are eaten, but the yellowish membrane is too astringent. (Floridata.com)

2. Aegle marmelos (L) (Rutaceae)

   Synonym - Beal, Bili, Belda.

   Description : A small to medium-sized aromatic tree, deciduous; stem and branches, light brown to green; strong axillary spines present on the branches; the average height of tree, 8.5 m. Leaves are alternate, pale green, trifoliate. The terminal leaflet is 5.7 cm long and 2.8 cm broad, with long petiole. The two lateral leaflets are sessile, 4.1 cm long, 2.2 cm wide, ovate to lanceolate with reticulate pinnate venation. The Flowers are greenish white, sweetly scented, bisexual, stalked, arising from the leaf axil and Fruits are yellowish green, with small dots on the outer surface, oblong to globose, 5.3 - 7 2 cm in diameter; weighting about 77.2 g with 73.7 ml yellowish and mucilaginous pulp., the pulp of dried fruits retains its yellow. Seeds are numerous, embedded in the pulp, oblong,
compressed, white, having cotton-like hairs on their outer surface. The flowering is from June to the July. The fruits take almost one year to mature. The peak fruiting season is during May and June. (Pamar C & Kaushal M.K. 1982).