Evaluation of *Cyathodium cavernarum* Kunze Aqueous Extract for Anthelmintic Activity


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**ABSTRACT**

Bryophytes are a common sight in and around the world. Being small and relatively common, bryophytes are often over looked and understated. The present study aims at exploring one such kind - *Cyathodium cavernarum* Kunze for its anthelmintic property. Anthelmintic activity of *Cyathodium cavernarum* aqueous extract was evaluated using Indian earthworms *Phertima posthuma* at 10mg/ml, 20mg/ml, 30mg/ml, 40mg/ml and 50mg/ml, using piperazine citrate as standard. The time taken for paralysis and death was calculated for both the groups. *Cyathodium cavernarum* aqueous extract exhibited poor anthelmintic activity as compared to the standard drug. The study clearly indicates *Cyathodium cavernarum* aqueous extract is not a suitable drug of choice for anthelmintic properties.

**Key Words:** Bryophytes, *Cyathodium cavernarum*, *Phertima posthuma* and anthelmintic

**INTRODUCTION**

Bryophytes are the simplest non-vascular land plants with undifferentiated plant. They are more advanced than aquatic algae. They are generally believed to have evolved from algae. They are commonly called as "non vascular plants" because they do not have true vascular tissue and are therefore called "non-vascular plants". They usually grows on tree bases, trunks, branches, twigs, or leaves, or on fallen logs as dense patches usually in a undisturbed forest. *Cyathodium cavernarum* Kunze (Cyathodiaceae) is a tiny bryophyte, whose thallus are usually found in yellowish-green to light greenish or fluorescent green, thin, delicate, 4-10 x 4-5 mm in size, often dichotomously branched. As per World Health Organization(WHO) estimates there are about 2 billion people harbor of parasitic worm infections. These parasitic worm also infect livestock and crops. According to the WHO, only a few drugs are used in treatment of helminthes in humans. Anthelmintic drug from herbal sources will play an important role for these kinds of parasitic infections. In the current study, an attempt has been made to evaluate the anthelmintic potential of the commonly available bryophyte of Malabar region(Kerala) *Cyathodium cavernarum* Kunze.

**MATERIALS AND METHODS**

Plant Material Collection: *Cyathodium cavernarum* Kunze bryophytes were collected from the Malabar region of Kerala and the same was authenticated by Mrs. Manju.K.Nair, Asst. Professors, Guruvayoorappan college of Arts and Science, Calicut during the month of July 2013. Preparation of extract: The collected plant materials were made completely free of soil by thorough washings and it is dried. The dried materials were extracted using water using cold maceration technique and it is dissolved in water prior to the use of study.

**RESULTS AND DISCUSSIONS**

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Helminthiasis is a common condition prevailing in most part of the world due to worm infestation. This condition mostly prevails due to the lack of adequate sanitary facilities and supply of pure water associated with poverty and illiteracy. Helminthiasis is prevalent globally in 1/3 of population but most common in a developing country like India. In India, helminthiasis is a common problem largely seen in rural areas and to some extend in urban regions also. Anthelmintics are the drugs which expel the parasitic worms (helminths) from the body by either stunning or killing them. But the major drawback associated with this anthelmintic is that, most of the gastrointestinal helminthes are become resistant to the currently available drugs. Moreover, these drugs are also at high cost. These factors contributed the way for trying out novel anthelmintic agent from herbal resources. Bryophytes are a common sight in and around the world. Being small and relatively common bryophytes are often overlooked and understated. In the present study an attempt had been made to evaluate anthelmintic potential of Cyathodium cavernarum. Preliminary phytochemical studies on Cyathodium cavernarum revealed that the drug contains trace levels of carbohydrates, flavonoids and proteins. Aqueous extract of Cyathodium cavernarum was evaluated for its anthelmintic property using Indian earthworm Pheretima posthuma at 5 different concentrations 10mg/ml, 20mg/ml, 30mg/ml, 40mg/ml and 50mg/ml against the standard drug piperazine citrate at the same doses of treatment. The study clearly depicts that the bryophyte- Cyathodium cavernarum is not a suitable drug of choice for the anthelmintic action.

CONCLUSION

Bryophytes are a common sight in and around the world. In the present study an attempt had been made to evaluate anthelmintic potential of Cyathodium cavernarum aqueous extract at 10mg/ml, 20mg/ml, 30mg/ml, 40mg/ml and 50mg/ml against the standard drug piperazine citrate. The study concludes that the bryophyte- Cyathodium cavernarum Kunze aqueous extract is not a suitable drug of choice for the anthelmintic action.

REFERENCES