



## ***In-vitro* Anthelmintic Activity of *Boerhavia diffusa* (Nyctaginaceae) Ethanolic Leaf Extract, Including Pharmacognostical and Phytochemical Screening**

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### DESCRIPTION

Helminth infections, often known as helminthiasis, are a common illness and a leading degenerative disease that affects a huge percentage of the world's population. They are a significant hazard to public health in impoverished nations, contributing to malnutrition, anaemia, eosinophilia, and pneumonia. The helminth parasites live mostly in the human intestine, but they can also be discovered in tissue as their larvae travel there.

The majority of helminthes1-related disorders are chronic and debilitating, and they are likely to inflict more morbidity and economic and social hardship in people and animals than any other parasitic group. Chemotherapy for helminths, combined with better management, has been a key worm control method all over the world. However, the development of resistance in helminths to traditional anthelmintics is a major issue in the treatment of helminth infections. It is critical to explore for new techniques to combat gastrointestinal nematodes in the future, which has led to the suggestion of screening medicinal herbs for anthelmintic activity.

The goal of this study was to learn more about the anthelmintic efficacy of ethanolic leaf extract of *Boerhavia diffusa*.

The plant *B. diffusa* (Nyctaginaceae) was examined for macroscopical, microscopical, and physiochemical parameters, as well as florescence analysis (day light, long UV), all of which were found to be within acceptable limits.

The ethanolic extracts of the plant leaves were made using a continuous hot extraction method using a Soxhlet apparatus, with a percentage value of 9.35 percent w/w. Preliminary phytochemical study of ethanolic extracts revealed the presence of active phytoconstituents such as alkaloids, amino acids, carbohydrates, saponins, tannins, and triterpenes.

Parasitic helminths afflict both animals and humans, causing significant suffering and stunting of growth. Human infections by helminthes affect hundreds of millions, if not billions, of people globally, increased global travel and immigration from developing nations.

Despite the fact that considerable progress has been achieved in the last decade, and a large number of synthetic precursors have been generated to deal with parasite damage, no effective treatment has yet been developed.

Furthermore, issues connected with the use of such treatments, such as major side effects and the development of resistance, increase the severity of infection. These reasons cleared the path for herbal

therapies to be used as anthelmintics as an alternative. These days, researchers are evaluating the activities of medicinal herbs that claim to have anthelmintic properties. Screening and careful evaluation of the alleged therapeutic plants could provide viable options that are both sustainable and environmentally friendly.

The results of this investigation showed potential anthelmintic efficacy, suggesting that *B. diffusa* ethanolic leaf extracts could be used to control intestinal nematodes. The components contained in ethanol extracts may be responsible for their anthelmintic action. The ethanol extract was found to be more effective with anthelmintic properties in this investigation.

The extracts' activity was proportional to their concentration. The extracts' activity was shown to be inversely proportional to the time it took the earth worms to be paralyzed/dead. The current study's findings showed that a crude ethanol extract of *B. diffusa* had antihelmintic efficacy against the Indian earthworm *P. posthuma*.

At a concentration of 100 mg/ml, the plant has strong anthelmintic action, as determined by the time it takes for the earth worms to be paralysed or die.

### CONCLUSION

The current study concludes that the leaves of *B. diffusa* exhibit significant anthelmintic action comparable to that of commonly used drugs. In this investigation, it was found to be effective against other helminth species. To carry out and establish the effectiveness and pharmacological reasoning for the use of *B. diffusa* as an anthelmintic medication, more studies employing *in vivo* models and to isolate active ingredients from extract are necessary.