Preliminary Phytochemical Analysis and In vitro Anti-helmenthic activity of Achyranthes aspera Leaf extract

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ABSTRACT
Objective: To evaluate the preliminary phytochemical analysis and in vitro Antihelmenthic activity of leaf extract of Achyranthes aspera. Background: Achyranthes aspera is an annual, stiff-erect herb found commonly as a weed throughout India. The leaf ethyl acetate extract showed high larvicidal activity on the tick larvae of Rhipicephalus. It strengthens the liver and kidneys, strengthening muscles, tendons and bones, anti-inflammatory, anti-toxin, urine laxative, normalize menstruation, hemostatic, ease childbirth. Chemical ingredients includes Akirantin, glokosa, galactose, reilosa, rammosa, and alkaloids. Hentriakontan, sapogenin, Betaine, ecdysterone, triterpenoid saponins. Methods: Preliminary phytochemical analysis was done by adopting the method of Evans. Antihelmenthic assay is performed by standard protocol. Result: The present study reveals the presence of few secondary metabolites and the extract exhibits potent Antihelminthic activity. Conclusion: From the present study it can be concluded that Achyranthes aspera leaf extract possessed marked in vitro Antihelminthic effect.

Key words: Achyranthes aspera, Anti-helmenthic, Anti-inflammatory, Laxative, Phytochemical.

SUMMARY
• Achyranthes aspera leaf showed prominent anti-helmenthic activity.
• Achyranthes aspera leaf showed presence of phytochemical constituents.
• Achyranthes aspera is used in management of inflammatory disorders, cough, bronchial asthma.
• Achyranthes aspera leaf extract were reported to posses thyroid stimulating and anti-peroxidative properties.
• Achyranthes aspera strengthen the liver and kidneys, strengthening muscles, tendons and bones, anti-toxin, urine laxative, normalize menstruation, hemostatic, ease childbirth.

INTRODUCTION
Achyranthes aspera L. (Amaranthaceae) is distributed as weed throughout India, tropical Asia and other parts of the world.1,2 The plant is a popular folk remedy in traditional system of medicine throughout the tropical Asian and African countries. It grows throughout the tropical and warmer regions throughout the world.3,4 The weed is also found in many other countries of Asia as well as Africa, America, Europe and Australia.5,6 The plant is reported to be used as antimicrobal, larvicidal, antifertility, immunostimulant, hypoglycemic, hypolipidemic, anti-inflammatory, antioxidants, diuretic, cardiac stimulant, antihypertensive, anti-anasacra, analgesic, antipyretic, antinociceptive, prophyrodic, anti-spasmodic, antihelminthic, etc for various purpose.7

MATERIAL AND METHODS

Plant Material
Achyranthes aspera where collected from Hosur Tamil nadu. Leaves were dried in open air under shade. 100 g of dried Achyranthes aspera was used in extraction Method. Plant material was authenticated by NIRCAIR, New Delhi. The voucher specimen were stored in M/s. Green Chem, Bangalore For further use.

Extraction protocol
The powdered dried leaf of Achyranthes aspera extracted with 80% Ethanol, at 55 to 60°C temperature, for 2 hours, in a round bottom flask with condenser attached. Collect the extract. Repeat extraction with 80% Ethanol. Collect the extract. Marc was again extracted with 50% ethanol twice at a temperature of about 55 to 60°C, for 2 hours. The extracts are distilled. Solvent was removed under pressure in a Buchi Rotary evaporator at 30-35°C to obtain a concentrate. The concentrate was chilled at temperature about 6–10°C for a period of about 7-8 hours to remove the resinous matter. Chilled concentrate was filtered. Filtrate was collected. Filtrate was evaporated to dryness under reduced pressure in a Buchi Rotary Evaporator (Switzerland) at 50-55°C. Powdered A. aspera leaf extract was obtained.

Drugs and chemicals
All the chemicals and reagents were procured from HI media (Mumbai, India). All the chemicals were of analytical grade. The drug Albendazole was procured from Sigma aldrich.

Phytochemical analysis
The ethanolic extract so obtained from the dried leaf powder of A. aspera, were tested for the presence and absence of the phytochemicals
Achyranthes aspera stem extract has been proved to possess the anti-helminthic activity. Hence A. aspera leaf extract were tested at various concentration against adult earthworm.

The ethanolic leaf extract of Achyranthes aspera showed significant anti-helminthic activity. The result of anthelmintic activity of alcoholic leaf extract of A. aspera on earthworms (Phertima posthuma) were given in Table 2. It was concluded from the study that the extract showed marked anthelmintic activity than the standard drug albendazole. Standard drug albendazole is showing moderate activity.

### CONCLUSION

In conclusion, the traditional use of leaf of Achyranthes aspera as an anthelmintic drug have been confirmed as the ethanolic extract of A. aspera displayed activity against the worms used in the study. Further studies are required to establish the mechanism(s) of action are required.

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### CONFLICT OF INTEREST

The author declares no conflict of interest.

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