

## Abstract

*Mansoa alliacea* (Lam) is a traditional medicinal plant commonly known as garlic vine. In the present study an attempt has been made to optimize a method for efficient callus culture of *M. alliacea*, to analyze the phytochemicals contents in the plant and to evaluate the effect of these phytochemical on anthelmintic activity of the plant. It was reported that NAA, BAP alone or in combination of BAP and IBA, BAP and NAA, BAP and IAA induced callus in the explants of *M. alliacea*. BAP and NAA induced callus in all the explant of *M. alliacea*. BAP and IBA were found to be the best combination for the induction of callus in leaf, node and petiole. Best combination was 4 mg/L BAP and 1 mg/L IBA for callus induction as well as for the regeneration. Indirect regeneration was recorded on the combination of BAP 4mg/L and IBA 1 mg/L as well as on NAA 2 mg/L and BAP 0.5 mg/L. Both the medium was supplemented with 200 mg/L casein hydrolysate 100 mg/L Glutamine 8 mg/L CuSO<sub>4</sub>. In the study petroleum ether, chloroform ethanol and water extract of the plant were evaluated for the phytochemical and anthelmintic activity. Phytochemical analysis of different extracts revealed the presence of phenols, flavonoids, glycosides, tannins, and anthocyanin. The extracts were also evaluated for total anthocyanin, flavonoids and phenolic contents. Ethanol extracts of the callus raised on BAP 4 mg/L and IBA mg/L have highest amount of anthocyanin, phenols and flavonoids i.e., 7.31 mg/100 mg, 153.7 µg/ml and 3.11 µg/g respectively. The time of paralysis of worms ranged from 15 to 25 minutes at 100 mg/L and time duration for death of helminthes ranged from 50 to 110 minutes .The ethanol extracts showed highest anthelmintic activity and while the aqueous extract was least effective. So the result revealed that polar extracts of the callus have high content of phenols and flavonoids possess high anthelmintic activity. The result of present study also supported the use of *M. alliacea* in traditional medicines.