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EFFECTS OF ETHANOLIC PLANT EXTRACTS ON BMNPV INOCULATED SILKWORM, *BOMYX MORI* IN RELATION WITH MIDGUTANTIOXIDANT ENZYMES, ACID PHOSPHATASE AND NON-SPECIFIC ESTERASE

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ABSTRACT

Plants containing secondary metabolites such as alkaloids, flavonoids and triterpenoids are normally used against infection caused by virus in animals. A few selected ethanolic plant extracts containing alkaloids *(Aegle marmelos, Mormordica charantia* and *Argemone mexicana)*, triterpenoids *(Curcuma longa, Syzygium cumini, Mormordica charantia* and *Euphorbia geniculata)* and flavonoids *(Syzygium cumini)* were tested in the present investigation against Nuclear Polyhedrosis Virus (BmNPV) infection of *Bombyx mori.* LC50 dose of BmNPV (1 x 10^4 polyhedral inclusion bodies) resulted in 51.66 % mortality in inoculated larvae. But the treatment of ethanolic plant extracts containing antiviral secondary metabolites reduced the mortality in BmNPV inoculated larvae (LC50 dose) up to 8 ~ 21 %. BmNPV infection caused increased oxidative stress in midgut tissue resulting in decreased superoxide dismutase (SOD) activity and decreased catalase (CAT), ascorbate peroxidase (APOx), acid phosphatase (ACP) and nonspecific esterase (NSE) activity in larvae on the sixth day of infection. Treatment of ethanolic plant extracts to BmNPV inoculated larvae at LC50 dose augments the activity of enzymes SOD, APOX, ACP and NSE and decrease CAT activity on sixth day of treatment. Results of the present study confirm antiviral activity of the ethanolic plant extracts against grasserie causing BmNPV of *Bombyx mori.*

Key words: Ascorbate peroxidase, BmNPV, catalase, mortality, plant extracts, superoxide dismutase.