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Effect of feed supplementation with biosynthesized silver nanoparticles using leaf extract of *Morus indica* L. V1 on *Bombyx mori* L.

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Herein, we report the synthesis of silver nanoparticles of Morus indica L. V1. The synthesized AgNPs exhibited maximum UV-Vis absorbance at 460 nm due to surface plasmon resonance. The average diameter (~54 nm) of AgNPs was measured from HR-TEM analysis. EDX spectra also supported the formation of AgNPs, and negative zeta potential value (-14 mV) suggested its stability. Moreover, a shift in the carbonyl stretching (from 1639 cm-1 to 1630 cm-1) was noted in the FT-IR spectra of leaf extract after AgNPs synthesis which confirm the role of natural products present in leaves for the conversion of silver ions to AgNPs. The four bright circular rings (111), (200), (220) and (311) observed in the selected area electron diffraction pattern

are the characteristic reflections of face centered cubic crystalline silver. LC-MS/MS study revealed the presence of phytochemicals in the leaf extract which are responsible for the reduction of silver ions. MTT assay was performed to investigate the cytotoxicity of AgNPs against two human cell lines, namely HepG2 and WRL-68. The antibacterial study revealed that MIC value of the synthesized AgNPs was 80 µg/ml against *Escherichia coli* K12 and *Staphylococcus aureus* (MTCC 96). Finally, the synthesized AgNPs at 10 µg/ml dosages showed beneficial effects on the survivability, body weights of the Bombyx mori L. larvae, pupae, cocoons and shells weights via enhancing the feed efficacy.

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