



Effect of Nanoparticles on Morphological and Biochemical Parameters of Black Gram Seeds (*Vigna Mungo*)

• Takhsish Ara • Sharmin Fatma

• Hena Naz

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Corresponding Author : Hena Naz

Abstract : *Plants are essential fundamental components of all ecosystems, and the interaction between NPs and plants is an indispensable aspect of risk assessment. Plants need to be included to develop a comprehensive toxicity profile for nanoparticles. Effects of three types of nanoparticles (silver, sulphur, and iron oxide) on seed germination and root growth of Vigna mungo plant were investigated on two concentration i.e 100ppm and 500ppm. Originally, this paper focuses on NP phytotoxicity, which is an important precondition to promote the application of nanotechnology and to avoid the potential ecological risks. NPs phytotoxicity is tested*

on both morphological (plant height, germination %, seedling vigour & plant biomass) and biochemical parameters (Total soluble sugar, starch and amylase activity). FeO NPs showed maximum stress in both the concentration followed by Ag NP's and S NP's.

Keywords: *Biochemical parameters, nanoparticles, phytotoxicity, Vigna mungo.*

Takhsish Ara

B.Sc. III year, Botany (Hons.), Session: 2016-2019,
Patna Women's College, Patna University, Patna,
Bihar, India

Sharmin Fatma

B.Sc. III year, Botany (Hons.), Session: 2016-2019,
Patna Women's College, Patna University, Patna,
Bihar, India

Hena Naz

Assistant Professor, Department of Botany,
Patna Women's College, Bailey Road,
Patna-800 001, Bihar, India
E-mail : henanaz64@gmail.com

Introduction :

Recent advances in nanotechnology have made a great impact on industries including manufacturing, biomedical applications, electronics/ telecommunications, agriculture and renewable energy, among others (Ma, White, et al. 2015). Nanoparticles (NPs) are broadly defined as particles having at least one dimension between 1 and 100 nm in diameter (Auffan et al. 2009). Because of their unique properties and novel features, NPs have been widely used in many aspects of daily life and energy production, including in catalysts, semiconductors, cosmetics, drug carriers and