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**Synthesis of 1,2,4-triazolo capped metal /metal oxide nano aqua formulations for its impact on seed quality of rice (*Oryza sativa*)****Anjali Sidhu and Anju Bala**

Punjab Agricultural University, India

Seed treatment is the cheapest and the safest method of plant disease control, to check seed and soil borne pathogens. Many seed treatment agents, viz. organomercurials, benomyl and tridemol have already been banned for agricultural use. Many compounds viz. captan, thiram carbendazim, thiophanate methyl and many other are under review for their use in agriculture and may become banned by 2018. Thus, time demands an urgent need to revive chemo-pathological aspects of novel seed treatments, having low dosage activity with broad spectrum horizon, encompassing favorable ecological concerns. In extension of the earlier work on synthesis of bioactive organo-silver nano aqua formulations as antifungal agents and impact of novel formulations on seed quality and health, the present work pertains to screening of fused 1,2,4-triazoles against various phytopathogenic fungi viz. *Alternaria alternata*, *Bipolaris oryzae*, *Fusarium moniliforme*, *Pyricularia oryzae* and *Sarocladium oryzae*. The most potent compounds were encapsulated on chemically synthesized silver nanoparticles (most commercially permitted nanoparticles) and their ZnO NPs (regarded safe according to GARS list) and MgO NPs (Mg being most assimilative element in the plant kingdom) analogues were prepared for comparative studies. The prepared 1,2,4-triazolo capped metal/metal oxide nano aqua formulations were characterized for their particle size, optical properties and loading capacity by TEM, FT-IR, DLS and UV-visible spectrometric techniques. Multifold increase in the antifungal potential was observed in case of nanohybrids than their individual components and standard fungicides. The seed applications on rice seeds depicted exciting results with favorable seed health and quality parameters advocating their further exploitation for in vivo trials.

anjalisidhu@pau.edu