

## EXECUTIVE SUMMARY OF UGC MINOR RESEARCH PROJECT

**Title of the Project:** Synthesis and study of some new chlorosubstituted Thiazines and Thiazoles and their impact on seed germination of some flowering plants.

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**UGC Reference No:** F. 47-2043/11 (WRO), Dt. 22.02.2012.

**Period of project:** 22.02.2012 to 21.02.2014.

**Place of work:** Department of Chemistry, Amolakchand Mahavidyalaya, Yavatmal

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### Brief objectives of the project:

1. To synthesize novel compounds this will have applications in pharmaceutical, agriculture and industrial fields.
2. To test their applicability as regards to the above fields.
3. To take precautions that the use of these compounds will not have any polluting, contaminating or intoxicating effect on the host.
4. As such these compounds will have the life saving potential for flora and fauna.
5. The present work is aimed at enriching the existing knowledge of chemical sciences in general and heterocyclic chemistry in particular.

**Methodology:** In the present work, we have synthesized some chlorosubstituted thiazines and chlorosubstituted thiazoles. These newly synthesized compounds have been tested for their impact on seed germination and plant pathogens with special reference to some *tropical ornamental plants*. The research work was based on laboratory synthesis. The structures of compounds have been confirmed on the basis of their elemental analysis, chemical properties and spectral data like IR and NMR etc.

**Result and Discussion:** The intermediate chalcones and flavones have been found to be the enough potential in the synthesis of heterocyclic compounds like thiazines and thiazoles. Synthesised compounds were isolated in good yields and found to have much more antimicrobial potential against various pathogenic bacteria. The compounds were found to be very sensitive (bacteriocidal) against the organisms viz., *S. aureus*, *Streptococcus sp.*, *Pseudomonas sp.* and *Solmonella typhi*. Screening of the compounds for their effect on seed germination of the ornamental plants viz, *Tagetes patula* (Zandu) and *Garbera Jamesonii* (*Garbera*) showed that the compounds help to enhance the growth of these plants.

**Paper Publication:**

1) Synthesis and antibacterial studies of some 1, 3-thiazines.  
*Asian Journal of Chemistry*; Vol 24, 12(2012), 5699-5700.

**Paper Presentation:**

- 1) Synthesis and antibacterial assay of 3-(3, 5-Dichloro-2-hydroxy)-phenyl-5(2, 6-dichlorophenyl)-1-substituted pyrazolines. *National Conference on Environmental Impact and Organism Response- Shri. R.G.Rathod Arts and Science College, Murtizapur, Dist. Akola* (Sept.2013)
- 2) Synthesis and characterization of 3-(3,5-Dichloro-2-hydroxy)-phenyl-5-(2-hydroxyphenyl)-1-substituted pyrazolines. *Nat. Conf. on Frontier Areas in Chemistry, Shri. Shivaji Science College, Amravati.*(Oct. 2013).
- 3) Synthesis and antibacterial assay of some chlorosubstituted 4-Aroyl/Alkylpyrazoles. *Nat. Conf. on Frontier Areas in Chemistry, Shri. Shivaji Science College, Amravati.*(Oct. 2013).

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