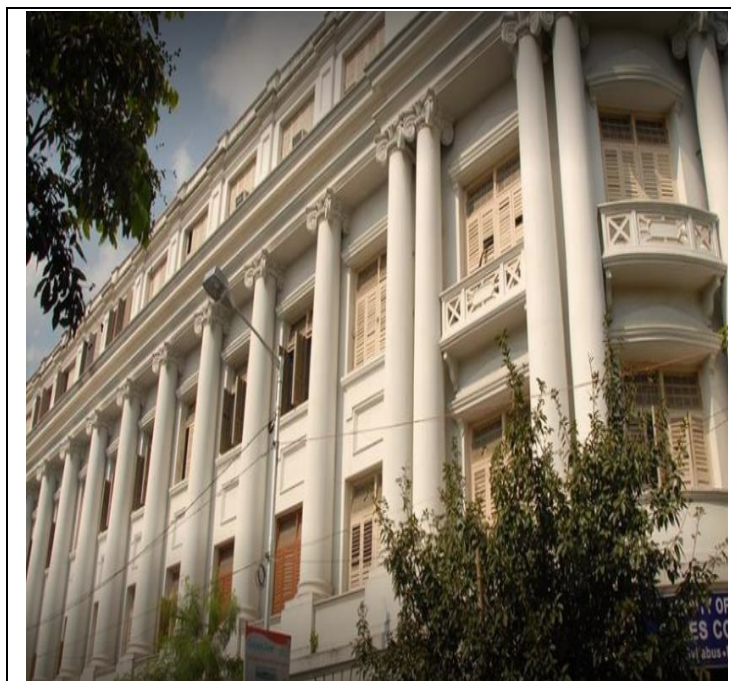


## Impact of exogenous silicate amendments on respiratory cycle, GABA and polyamine biosynthesis in rice (*Oryza sativa* L. cv. MTU-1010) seedlings subjected to arsenate stress

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**Abstract:** Ground water arsenic contamination is a serious threat in West Bengal, India and in many regions of the world. The purpose of investigation was to determine ameliorative effects of silicon on respiratory cycle,  $\gamma$ -aminobutyric acid and polyamine synthesis in rice seedlings under arsenic stress. Arsenate is reduced to arsenite by arsenate reductase that leads to decrease in growth in arsenate treated rice seedlings. Silicate application in arsenate treated seedlings altered these effects significantly. In the test seedlings the activities of respiratory enzymes viz., pyruvate dehydrogenase, isocitrate dehydrogenase,  $\alpha$ -ketoglutarate dehydrogenase, succinate dehydrogenase, fumarase, malate dehydrogenase and citrate synthase were decreased while organic acids levels viz., pyruvate, citrate, succinate and malate were increased under arsenate application. But joint application of silicate along with arsenate increased the activities of all respiratory enzymes resulted in more enhancement of organic acid contents in the seedlings.



**Biography:** Susmita Das, DST-INSPIRE Fellow she is working under the supervision of Prof. Asok Kumar Biswas in Plant Physiology & Biochemistry Laboratory, University of Calcutta, India.

### Publications:

1. Evaluating the Mechanical Properties of Admixed Blended Cement Pastes and Estimating its Kinetics of Hydration by Different Techniques
2. Genetic Diversity Using Random Amplified Polymorphic DNA (RAPD) Analysis for *Aspergillus niger* isolates
3. Au-Ag-Cu nanoparticles alloys showed antifungal activity against the antibiotics-resistant *Candida albicans*
4. Induce mutations for Bavistin resistance in *Trichoderma harzianum* by UV-irradiation
5. Biliary Sludge. Analysis of a Clinical Case

[5<sup>th</sup> International Conference On Plant Science and Physiology February 17-18, 2020 Osaka, Japan.](#)

**Abstract Citation:** [Impact of exogenous silicate amendments on respiratory cycle, GABA and polyamine biosynthesis in rice \(\*Oryza sativa\* L. cv. MTU-1010\) seedlings subjected to arsenate stress February 17-18, 2020 Osaka, Japan.](#)