National Institute of Technology Rourkela

Registration Seminar

Seminar Title	: Hydroponically grown biofortified microgreens as a dietary strategy for combating micronutrient deficiency (MiND)
Speaker	: Dibyabharati Panda (Rollno : 523bm2004)
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Venue	: BM Dept Seminar Hall (# 103)
Date and Time	: 24 Jul 2025 (11:00 AM)
Abstract	: Micronutrients, vitamins, and minerals are essential for growth and development in children as well as in adults. However, on a global level, two in three people suffer from hidden hunger or Micronutrient Deficiency (MiND) which arises because of the low level of nutrient uptake. Hidden hunger affects over 2 billion people worldwide, with India accounting for almost 50%. Iron deficiency or anemia is one of the most prevalent micronutrient deficiencies associated with hidden hunger. The global prevalence of anaemia among women exceeds 800 million. In India, it is a major public health issue due to the high prevalence of this condition, which affects 58.6% of children, 53.2% of non-pregnant women, and 50.4% of pregnant women. MiND in childhood and during pregnancy leads to serious complications including increased mortality, morbidity, physical and mental defects. Along with MiND, gestational diabetes mellitus (GDM) in pregnancy plays a dangerous role in increasing health complications for both mother and child. In India, GDM prevalence is estimated to be 10%-14.3%, higher than in Western countries. Approximately 10% of pregnancies are affected by diabetes, with 90% being GDM cases. Women with GDM have a 50% higher risk of developing Type II diabetes in the future. Therefore, to solve the common health complications in women (especially in rural areas/ low-income areas) it is very crucial to solve these two problems together as they both impact the health and well-being of women, and their interconnection can lead to compounding health risks and long-term consequences for both mothers and their children. Microgreens are reported as an ultimate source of high nutrition, and some species also possess anti-glycemic properties. Different biofortification techniques are also believed to enhance the nutrient content of microgreens. A few studies have been reported to increase the antiglycemic property. However, those are not enough to tackle the health complications mentioned. Hence, this project aims to adopt a unique approach for enhancing micronutrient content and antiglycemic properties simultaneously, which will be a promising strategy to overcome the existing deficiency, balance the nutritional need, and help in mitigating anemia and GDM.