
Departmental Seminar

Seminar Title	: Exploring Chitosan Lactate as a Multifunctional Additive: Enhancing Quality and Extending Shelf Life of Whole Wheat Bread
Speaker	: Prof. Kunal Pal
Supervisor	: Dr. Nivedita Patra
Venue	: BM Department Seminar Room
Date and Time	: 18 Sep 2024 (10.00 AM)
Abstract	: The shelf life of whole wheat bread (WWB) significantly impacts its freshness and overall quality. This research investigated the impact of chitosan lactate (CL) on various characteristics influencing the shelf life of WWB, including its physical, chemical, textural, antimicrobial, and sensory attributes. These characteristics were evaluated by conducting various experiments such as physical inspection, moisture, impedance, swelling, color, texture, FTIR, microbiological, and sensory analysis. CL with different concentrations was incorporated into WWB formulations: P0.0 (0.0% w/w CL, control), P0.5 (0.5% w/w CL), P1.0 (1.0% w/w CL), P2.0 (2.0% w/w CL), and P3.0 (3.0% w/w CL). The inclusion of CL promoted the Maillard reaction (MR) compared to P0.0. The promotion of MR resulted in the formation of a shinier crust, which increased as the CL content was increased. P0.5 comprised large-sized pores and exhibited increased loaf height. CL-containing WWB formulations showed an increased moisture content and decreased impedance values compared to the control. FTIR analysis of P0.5 demonstrated the enhanced interaction and bonding of water molecules. P0.5 demonstrated optimal textural, colorimetric, and antimicrobial properties compared to other formulations. The sensory attributes of WWBs remain unchanged despite CL addition. In conclusion, P0.5 exhibited optimal characteristics associated with better quality and prolonged shelf life. Keywords: Bakery; Chitosan derivatives; Overall quality; Polysaccharides; Storage life; Texture ALL ARE CORDIALLY INVITED