

International E-Conference on

# NUTRITION AND FOOD SCIENCE

December 09-10, 2020 | Virtual Webinar

## Pentosan characteristics of different Indian wheat varieties and their relationship to Bread-making quality

**Hemalatha M.S\* and Prasada Rao UJS**

CSIR-Central Food Technological Research Institute, Mysuru, India

**W**heat flour contains 2-3% of pentosans and are reported to influence quality of bakery products. They play key role in dough rheology, bread quality by increasing the bread volume and textural properties of crumb due to viscosity, water binding and oxidative gelation. The study was done to test the suitability of Indian wheat varieties for breadmaking and to correlate the pentosans relativity to bread quality. Eight different wheat varieties (GW322, HD2189, HD2501, HD2781, K9644, MACS2496, NI5439 and NIAW34) grown at a single geographical location were procured and milled to refined wheat flour. Wheat flour were evaluated for total protein, total sugars, damaged starch, Ash, total starch, falling number and SDS sedimentation. Rheological experiments like farinograph, extensograph and amylograph were done. Gas liquid chromatography were done for wheat flour and Pentosans isolated from wheat flour by derivatising to alditol acetates. Test baked bread prepared were subjected to objective and subjective sensory evaluation. The damaged starch in wheat flour ranged from 7.0 -11.1%, falling number from 604-1109 sec and total starch from 75.2-83.8%. Rheological experiments showed water absorption was high ranging from 59.8 to 68.4% with higher resistance to extension with a value of 770 BU and highest peak viscosity of 850 BU. The arabinose content ranged from 0.71% to 13.2% and xylose content ranged from 1.42% to 16.1% in wheat flour. The arabinose content ranged from 21.44% to 74.11% and xylose content ranged from 21.8% to 71.9% in isolated pentosans of respective wheat flours. The objective and subjective sensory evaluation showed that higher arabinose/xylose ratio had better bread quality.

**Keywords:** Bread, Pentosans, rheology, isolation

### Biography:

Hemalatha M.S. is a Assistant Professor at Department of Food Science and Nutrition, Karnataka state Open University, Mukthagangothri, Mysuru. She has completed Ph.D. from CSIR-Central food Technological Research Institute, Mysuru. She was awarded Research fellowships from Bhaba Atomic Research Centre and also from Department of Science and Technology. She has more than 15 years of research and teaching experience. She has published many research papers in peer reviewed journals and authored Book Chapter. She has presented research abstracts in many National and International Conferences and also been awarded for Best Research Papers.