QUALITY ASSESSMENT OF WHEAT VARIETIES OF LADAKH FOR BISCUITS MAKING CHARACTERISTICS

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ABSTRACT

Eight wheat varieties of Ladakh region were evaluated for the protein, sedimentation value, gluten, diameter, thickness and spread factor for biscuits making. The data presented for various parameters of biscuits indicate that the SWL-30 was very well be considered better wheat variety for biscuits making.

Wheat (Triticum aestivum L.) is a summer season crop in cold arid region of Ladakh in the state of Jammu and Kashmir. It is grown during May to September. Wheat is the second major crop of Ladakh region next to barley. However, with the changes in food habits, the area under its cultivation is steadily increasing and enhanced productivity from the region is possible through adoption of high yielding varieties of wheat. Thus high yielding varieties of wheat suitable for making not only good chapattis but also in other product or application of wheat which would provide better return to the farmers is the need of the hour. There is a great scope for biscuit industries in India as the demand for biscuit is increasing @7 % per annum which may further increase with the further liberalization and globalization of economy and urbanization. The quality of the wheat flour for biscuit making depends on the soft texture of the grain, low protein content and weak gluten strength. Therefore, the present study was undertaken to know the biscuit making quality of wheat varieties grown in Ladakh region and to identify the varieties suitable for biscuit making.

The present study was carried out on wheat varieties namely Singchen, Sonam, Mansarover, Kailash, SWL-19, SWL-23, SWL-30 and Leh local. The grains of these wheat varieties were procured from the Regional Agricultural Research Station, SKUAST-K, Leh. The grains were cleaned, air dried and stored in air tight container for use. The biscuits prepared from flour (AACC, 1995) were randomly selected to measure their width and thickness using Digital Vernier Callipers. Spread factor was calculated according to AACC method (1995) and Mishra et al (1998). Protein content was determined by Infratec-1255 Food &Feed Analyzer (NIR). Sedimentation value and gluten per cent were determined by the method described in AACC (1995).

Physical characteristics of biscuits prepared from the flours of different wheat varieties and chemical composition of the varieties are given in Table-1. There was not much variation in the diameter of the biscuits as the values for the parameter expressed in centimeter ranged in between 6.93 to 7.83, minimum value 6.93 cm in Sonam and maximum value 7.83 cm in SWL-30. Similarly thickness did not show much variation and it varied between 1.04 to1.16 cm with minimum value of 1.04 cm in SWL-30 and maximum value 1.16cm in Sonam. The variation observed in spread factor was again not much wide as the values obtained for this parameter ranged from 5.97 to 7.53 with maximum value of 7.53 in SWL-30 and minimum value 5.97 in Sonam. Yamamoto et al (1996) reported that larger biscuit diameter and higher spread factor are considered as the desirable quality attributes and are the important parameters for evaluating the wheat varieties for the biscuit making. Protein content in the wheat varieties ranged from 10.56 to 11.26.

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to 14.20 % with minimum (10.56%) being in SWL-30 and maximum (14.20%) in Sonam variety. The sedimentation value in the wheat varieties ranged from 27.0 to 38.0 ml with minimum (27.00ml) in SWL-30 and maximum (38.00ml) in SWL-19. Sedimentation test is used for assessing the quality of gluten and thus quality of flour. The dry gluten content is ranged from 7.60% to 11.80% with minimum (7.60%) being in SWL-30 and maximum (11.80%) in Sonam. In general wheat variety with soft grain texture, low protein content and weak gluten strength yield biscuits with large diameter and higher spread factor could very well considered better variety for biscuit making. On the basis of biscuit making and its quality, wheat variety SWL-30 was found best for biscuit making among the seven high yielding varieties and Leh local of wheat. The selected variety (SWL-30) had diameter (7.83cm), thickness (1.04cm), spread ratio (7.53), protein (10.56%), sedimentation value (27.0ml) and gluten (7.60%) in the present study and therefore, it is well suited for biscuit making with respect to quality and yield.

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