

Research Paper :

Quality evaluation of bread wheat germplasms

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ABSTRACT

An experiment was laid out at C.S.A. University of Agriculture and Technology, Kanpur during 1994-96 to evaluate wheat varieties/ strains/ lines for their suitability of bread making quality and other quality characters viz., grain characteristics, flour characters, dough characteristics, Chapati quality etc. Experimentation material included six strains of bread wheat (*Triticum aestivum* L.) i.e. K-8965, K-9222, K-8027, (undertaken as check), K-9329, K-9323 and K-9443. It was revealed out from the study that K-8027 (check) and K-9443 appeared to be best for eleven characters namely; grain hardness, phenol colour reaction, protein content, wet gluten, dry gluten, sedimentation value, pelshenke value, water absorption, dough colour and appearance, dough handling property and suitability for Chapatti quality .

Key words : Bread wheat, *Triticum aestivum*, Quality evaluation

Wheat is an important cereal crop of world. Average productivity and production of wheat in Uttar Pradesh is 25.02 Q/ha and 215.14 Lakh M tones, respectively from an area of 90.00 Lakh ha (Anonymus, 2008) which showed tremendous potentiality for improving yield of the crop. The production and productivity of wheat in different parts of the country. *Aestivum* wheat is the most important cultivated species of the genus *Triticum* (a hexaploid wheat) which is generally considered as main crop among all species in our country.

METHODOLOGY

The present experiment was conducted at Department of Home Science and Department of Biochemistry, C.S. Azad University of Agriculture and Technology, Kanpur. The experimental material included six cultivars of *Triticum aestivum* viz., K-8965, K-8027, K-9222, K-9329, K-9323 and K-9443 with K-8027 as check variety. Genetically pure seeds of these germplasms were procured from Economic Botany and Rabi Cereal section of C.S. Azad University of Agricultural and Technology, Kanpur.

The observations were recorded for various grain characteristics viz., test weight (1000 grain weight), grain hardness and phenol colour (Abrol *et al.*, 1971), flour characteristics viz; protein content (Williams, 1961), gluten content (Kaldy *et al.*, 1993), sedimentation value (Pinckney *et al.*, 1957), pelshenke value (Ammowath and Mabelsal993) and ash content (AOAC, 1970), Dough/alveographic characteristics (Austin and Ram, 1971) viz., water absorption, colour (dull whitish, whitish, creamish,

yellowish, light reddish and reddish) and appearance of dough (homogenous, heterogenous) and dough handling properties (sticky, slight sticky, non sticky) and Chapati characteristics viz., puffing (full puffed, almost full puffed, partial puffed slight puffed), colour (creamish and attractive, whitish, dull reddish and non attractive), aroma (pleasing, good mild blend, non pleasing), appearance (good, medium, fair, rough), texture (very soft and pliable, soft and pliable, medium soft, leathery), texture after keeping 4 hrs (medium soft to soft) and taste and palatability (very sweet, sweet, medium sweet, less sweet) test as per standard methods being followed.

FINDINGS AND DISCUSSION

The results obtained on the quality characteristics and nutritional quality parameters of different genotypes of *Triticum aestivum* are presented in Table 1 (grain characteristics and flour characteristics) and Table 2 (dough/aleuronic characteristics and Chapatti characteristics). Characterwise findings of the study are given below.

Grain characteristics:

Values of grain characters viz., test weight, grain hardness and phenol colour- reaction are presented in Table 1. Among six genotypes of *aestivum* wheat, maximum and minimum test weight and grain hardness was observed 43.240g (K-9222) to 29.607 g (K-8027) and 16.000 kg/g (K-8965) to 10.000 kg/g (K-9329), respectively. All genotypes showed significant differences for 1000 seed weight whereas, for grain hardness K-9222