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Effect of some wheat genotype on quality characteristics of wheat flour

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ABSTRACT

Quality characteristics of 12 wheat (6 *aestivum* and 6 *durum*) strains /genotypes were carried out in the laboratories of Home Science and Department of Agricultural Biochemistry of Chandra Shekhar Azad University of Agriculture and Technology Kanpur. In order to determine the quality of wheat flour from different genotype of *aestivum* and *durum* were analysed for grain hardness, test weight, phenol colour reaction, protein content, gluten content, sedimentation value and ash content. In grain hardness, *durum* wheat exhibited higher grain hardness than *aestivum* wheat while test weight was observed higher in the latter. In phenol colour reaction, only one genotype of *Triticum aestivum* namely NW-1014 showed desirable colour of dough on keeping. However in *durum* wheat, cultivars IDYN – 71, IDYN – 81, EDUTY – 90 and EDUTY – 76 showed desirable phenol colour reaction indicating better dough keeping quality. From the nutritional point of view *aestivum* genotype showed higher protein, gluten and ash content as compered to *durum* cultivars. Morever *durum* genotype showed higher sedimentation value than the *aestivum* group. It was concluded from the present studies that among *Triticum aestivum* genotypes PBW-343 appeared superior in most of the quality parameters and in *Triticum durum* group, EDUTY-76 genotype showed superior dough keeping quality.

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Key words : *Aestivum* wheat, *Durum* wheat, Genotypes, Quality characteristics

INTRODUCTION

Wheat quality is a relative concept and is usually judged by its suitability for a particular end use. Wheat suitable for one type of product may be quite unsuitable for another. The quality of wheat depends upon a number of factors. The grower, processor and consumer have different concept of quality characteristics of wheat. The grower considers wheat as of good quality if the plant mature properly, it gives good yield of clean wheat and the harvested grains have good marketing qualities like appearance, colour, high density, test weight etc. The processor looks wheat as of good quality in case big and uniform size of kernel, clean, free from admixture, desirable moisture content, protein content to suit particular end product while consumers require a wheat product having palatability, good appearance, high nutritive value and reasonable price.

Triticum aestivum is the most predominant species and grown in most part of the world. It is most suitable for the manufacture of bread. In India it is used for the preparation of Chapati bread and its culinary variations like tundoori non-paratha and puri etc. *Triticum durum* had hard texture and high protein content. It is mostly used for the production of semolina macaroni and pasta products. In certain areas wheat flour is mixed with certain pulses to make more nutritious, palatable and digestible chapati.

In wheat, albumin, globulin, prolamin and glutelin which constitute the total proteins influence the quality of the product. Keeping this in view, the present study was conducted to identify wheat genotype suitable for the production of good quality flour.

MATERIALS AND METHODS

Twelve wheat genotype, six each from *Triticum aestivum* (K-9006, K-9466, K-9107 (Deva), K6330, PBW-343, NW-1014) and six from *Triticum durum* (IDYN-71, IDYN – 3, IDYN-81, EDUTY90, EDUTY-76 and EDUTY-1) were obtained from wheat breeder of Economic Botanist, *Rabi* Cereals, Section of the Department of Genetics and Plant Breeding, Chandra Shekhar Azad University of Agriculture and Technology, Kanpur. Quality characteristics of wheat genotype/ cultivars were studied for grain and flour quality characteristics. In grain characteristics, 1000 grain weight, phenol colour reaction and grain hardness were determined and in flour, protein, gluten, sedimentation test and ash contents were estimated. 200 seeds of each strains was weighed on a chemical balance and multiplied by five for the assessment of weight. Phenol colour

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