Physical and Technological Characteristics of Some Imported and Local Turkish Bread Wheat Samples

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Wheat is one of the most common implanted grains in both Turkey and world due to reasons such as easiness of cultivation, production, transport and processing. In addition to this, wheat is a very important cultivar which is used as staple food in both human and animal nutrition. In this study, local types (Cumhuriyet75, Tosunbey, İzmir85, Panda, Bezostaja, Esperya, Negev, Adana99, Flamura and Toros) from “Göller Bölgesi” (Turkey) and imported wheat types (Kazak and Russian) which are used for producing bread were used as sample and they were investigated by looking at their physical and technological qualities. According to the analysis of wheat samples; Bezostoja type is the purest among other with %10.27 extraneous matter content, in spite of that type Cumhuriyet75 had %30.41 extraneous matter content and these grains content un-useful grains (%18.03). Flamura has the highest hectoliter weight (84.98 kg/hl) and the Cumhuriyet75 type showed the lowest hectoliter weight (71.11 kg/hl) as expected because of its highest extraneous matter content. All the samples had a thousand-kernel-weight value of between 35.15 g (Russian type) and 46.60 g (Negev type) and it should be emphasized that thousand-kernel-weight value is considered correlated with flour efficiency. As a result of sieve analysis of wheat types, it was revealed that Bezostaja type had the highest amount of wheat (%73.59) that remains on the 2.8 mm sieve and Cumhuriyet75 had the lowest (%25.86). According to the sieve analysis with 2.8 + 2.5 mm sieves, Bezostaja type had the % 91.87 remains, therefore has the largest kernel and it was followed by Negev type (% 86.21). Cumhuriyet75, Panda and İzmir85 type had the average meanly grain content of %85, but on the other hand Esperya type had very low values around %13. It draws attention that; especially Tosunbey, Bezostoja and Esperya types whose grains display high translucent kernel depending on the climate have the values around 55%. Moisture values of wheat samples changed between 13.44% (Adana99) and 9.06% (Bezostaja), and the ash values changed between %1.73 (Tosunbey) and % 1.37 (Flamura and Negev). Flour samples were produced by grinding the wheat grains and their moisture and ash contents are like the following: %14.1 and %0.45. The lowest value has been found in Cumhuriyet75 both wet and dry gluten (%23.02 and %7.33); highest in Bezotaja type (%40.08 and %14.53). Gluten index values were determined as %90.94 (İzmir85) and %99.60 (Toros); sedimentation values as between 21.33 ml (Cumhuriyet75) and 41.00 ml (Bezostaja); delayed sedimentation values between 27.67 ml (Cumhuriyet75) and 54.00 ml (Esperya); falling number values between 340 s (İzmir85) and 484 s (Tosunbey). Wet gluten values of Kazak and Russian types were estimated as between %28.89 and %26.15; dry gluten values as between %9.47 and %78.50; gluten index values as between %97.78 and %99.33. It was also found that, when wheat flour protein values were compared Bezostaja has the highest value with %13.45, the lowest İzmir85 with %9.67 and Cumhuriyet75with % 9.71. Between other wheat types no significant difference was observed. The protein contents of imported wheat types Kazak and Russian were demonstrated as %11.18 and %10.61. Technological and physical analysis showed that Bezostaja type shows the best quality wheat for flour production and imported types doesn’t show a
significant difference in quality. In conclusion, to be able to create standard bread flour it is not necessary to import wheat and therefore local varieties can be searched.

Keywords: Bread Wheat, Flour, Technological, Physical