



Comparison of some kernel qualitative characters of wheat (*Triticum aestivum* L.) landraces

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Abstract Seven samples of the each wheat landraces were used to measure gluten and protein content of the kernels. Unpaired t tests were done using SPSS software version 22. The protein contents of the kernels in the two wheat landraces were significantly different at $P < 0.05$. Kernel protein content of Alrashid cultivar (21%) was more than that of Aba 99 (20%). The kernel gluten contents of the two wheat landraces were significantly different at $P < 0.01$. Kernel gluten content of Aba 99 was 15.01%, while the gluten content in Alrashid cultivar was 14%.

Keywords: : Gluten, kernel protein content, rain-fed conditions, wheat.

Introduction The crop provides a part of dietary calories and protein and a large amount of health-promoting nutrients for human diet. Due to climate change and increasing world population, an increase in wheat production is necessary (Yang et al., 2023). There are some important qualitative ingredients in wheat kernel including protein, gluten and minerals (Fe, Zn, ...) (Shewry et al., 2013).

Results and Discussion The protein contents of the kernels in the two wheat landraces were significantly different at $P < 0.05$. Kernel protein content of Alrashid cultivar (21%) was more than that of Aba 99 (20%). (Table 1). The kernel gluten contents of the two wheat landraces were significantly different at $P < 0.01$. Kernel gluten content of Aba 99 was 15.01%, while the gluten content in Alrashid cultivar was 14%. (Table 2). Soorninia et al. (2023) reported highly significant genotypic differences for grain protein and gluten contents among durum wheat accessions under irrigated and rain-fed conditions

Materials and methods In This research, two Iraqi rain-fed wheat landraces (Aba 99 and Alrashid) were investigated in terms of some qualitative traits of the wheat kernels. A field experiment was carried out at the research farm of Vaset province, Iraq. Each of the cultivars were planted in thirty experimental units during the cropping season 2021-2022 under rain-fed conditions. Seven samples of the each wheat landraces were used to measure gluten and protein content of the kernels (Sooreninia et al. 2023). Data analysis was performed using SPSS software version 22.

Table 1. T test for wheat kernel protein content

Cultivar	Mean (%)	n	SE of mean	t (df=12)	Prob
Aba 99	20	7	0.061	-2 *	0.05
Alrashid	21	7	0.08		

Table 2. T test for wheat kernel gluten content

Cultivar	Mean (%)	n	SE of mean	t (df=12)	Prob
Aba 99	15.01	7	0.047	11 **	0.01
Alrashid	14	7	0.055		

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