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(21355) RELATIONSHIP BETWEEN ALKALINE WATER RETENTION CAPACITY (AWRC) AND OTHER QUALITY PARAMETERS IN SOME CHICKPEA (*CICER ARIETINUM L.*) LINE AND VARIETIES

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Chickpea (*Cicer arietinum L.*) is an important pulse crop grown and consumed all over the world, especially in Turkey. It is quite rich in terms of complex carbohydrates, proteins, vitamins and minerals. When the quality parameters are determined, the water intake capacity has an important place in determining the quality of the chickpea. The Alkaline Water Retention Capacity (AWRC) test is also widely used for evaluation of soft wheat flours.

In this study, some selected chickpea lines were analyzed for alkaline water retention capacity with sodium bicarbonate solution which is usually done with wheat flour, in legume flours. The results were evaluated in a similar way to wheat flour. The correlations between protein, size (6mm, 7mm, 8mm, 9mm) cooking time, wet weight, dry weight, swelling capacity, wet volume, dry volume, swelling index and water uptake index were investigated. The use of acidic or basic solutions in flour tests is quite common. Hydration capacity, which is an important quality parameter in bread and durum wheat, is also very important for legumes. Hydration capacity is highly correlated with the alkaline water retention capacity. It has been determined that AWRC parameters is related to other quality parameters such as swelling index, wet volume, wet weight as well as hydration capacity.

The data were evaluated using JMP 7.0 statistical software (SAS Institute Inc.). There was no significant relationship between cooking time, sieve analysis, dry weight and dry volume and alkaline retention capacity. It was found positive correlation between alkaline water retention capacity data and swelling index ($r=0.613^{**}$), water intake index ($r=0.616^{**}$), wet volume ($r=0.320^{**}$), swelling capacity ($r=0.459^{**}$), hydration capacity ($r=0.378^{**}$). For protein content ($r=-0.345^{*}$) there was also found an important negative correlation.

There was a very high positive correlation between wet weight and wet volume; wet weight and dry weight; wet volume and dry volume; wet volume and hydration capacity ($r=0.994^{**}$; 0.963^{**} ; 0.948^{**} ; 0.980^{**} , respectively). In this study, it has been shown that the alkaline water retention capacity test can be successfully used in the selection of aspect for the quality of pulse breeding material.

Keywords: Chickpea , AWRC, Quality analysis