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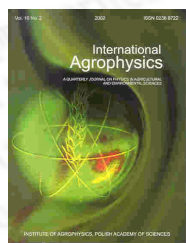
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Changes in hardness and thickness of wheat grain as a result of its moistening
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abstract The influence of moistening and gentle drying of wheat grain on the variability of such significant features as its hardness and kernel thickness have been studied. For moistening, the wheat grain samples were placed between layers of blotting paper imbibed by distillate water. This process lasted for 6 h. Then, after removing excess water from the kernels, the samples were dried at room temperature. Measurements of hardness (hardness index) and thickness (diameter) of a single kernel were carried out using a single-kernel characterization system type SKCS 4100 on the dried grain and on the control material (non-moistened grain). The results obtained clearly showed that after moistening a considerable decrease in the grain hardness index, by 10.6 [-] on the average, and rise in the kernel diameter, by 0.05 mm on the average, took place. The range of these changes was first of all related to the wheat cultivar. Rise in kernel thickness without a simultaneous increase in its weight shows that as a consequence of moistening, there could occur inner cracks of the endosperm causing an increase of its total volume and porosity. This kind of damage weakens the hardness of grain endosperm as well which what is reflected in the decrease of hardness index.

keywords wheat, kernel thickness and hardness, grain moistening, single kernel characteristics system

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