**Flour Baking quality improvement in wheat by physical mutagenesis**

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**Abstract**: About 13 million acres of wheat are cultivated in Iran. Wheat is one of the most important cereals for human nutrition and this is mostly related to physical and chemical properties of gluten in wheat seed. Wheat baking quality is under the control of genetic and environmental factors. Genetic factors can be improved through breeding. A significant barrier in plant breeding is the availability of useful genetic variation, and mutation induction can provide this. Three thousands seeds of wheat cultivars Roshan and Tabasi were exposed to a cobalt-60 gamma irradiation at a dose of 200Gy. Selected mutant lines were subsequently cultivated for seven years by single seed descent method to produce genetic purity that had high yield based on the selected wheat yield properties. Seeds from these superior mutant lines have been evaluated through rheological. Some mutant lines showed significant improvement in chemical properties as well as flour strength and stability of the dough. However, the obtained rheological results, only RO-3 was improved in most of the rheological properties therefore it has been selected for proteomics experiments. Furthermore, the expression of heat shock 70 kDa was increased in the mutant line which have affected baking quality traits. Down regulation of Cytosolic malate dehydrogenase was also observed. The results of this study showed that nutritional qualitative traits of wheat can be improved by applying physical mutation.

**Key words:** physical mutation, rheological, proteomics, wheat, gamma ray and protein