Improvement of Tagliatelle Quality by Addition of Red Quinoa Flour

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Abstract
In order to diversification of tagliatelle pasta and increasing segment of consumers it was intended to improvement of tagliatelle pasta quality by addition of red quinoa flour. The products obtained at Bakery Pilot Station of University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca was the result of original recipe. To optimize the recipe were made four experimental variants, white flour and red quinoa flour is used in different proportions: Variant 1 – plain tagliatelle pasta (control sample) who used white flour WF) in 100%, Variant 2 consisting of 15% red quinoa flour (15 QF), Variant 3 consisting of 30 % red quinoa flour (30 QF) and Variant 4 consisting of 50 % red quinoa flour (50 RQF). The experimental variants was analyzed for physico-chemical: moisture content, protein content and acidity. The sensory attributes, were evaluated by using a 9-point Hedonic scale. Present study indicated that the variant 3 were most accepted by consumers.

Keywords: pasta, pseudocereal, tagliatelle, quinoa, quality.

Introduction. Pastas have a special place in human’s alimentation due to the advantages they present regarding the nutritional value, the low costs, the possibilities of cooking them and the high level of conservation and attractive sensorial characteristics. The nutritional value of quinoa seeds (Chenopodium quinoa) is exceptional due to the high content of protein (even up to 18 g./100 g) and lipids upper of the most cereals. The seeds contain on average (per 100 g DM): 334 kcal, 14.8 g fat 5.04 protein, 3.33% fat minerals and vitamins B1 (thiamine), B3 (nicotinic acid). Quinoa is gluten free and rich in lysine and methionine (George Valentin Roman, et al., 2011)

Aims and objectives. The objective of this research was to study the effect of the addition of red quinoa flour to tagliatelle on the cooking quality and total protein content of pasta. Tagliatelle type pasta was obtained at three levels of added red quinoa flour (15%, 30% and 50 %); plain tagliatelle (100% white flour) was used as control.

Materials and methods. The raw materials were purchased from specialized stores. Both the raw materials and pasta type were analyzed by physico-chemical indices. To respect the traditional recipe of tagliatelle pasta was added one egg to one hundred grams of flour. Quinoa flour, wheat, eggs, oil and salt were prepared in appropriate amounts specified recipe. The ingredients were mixed and were dough kneaders for 15 minutes until the dough has obtained a firm consistency, after which he formed into a ball, preparing it for the division. Dough balls were wrapped in plastic wrap for 30 minutes before being flattened. Each ball of dough passing it through the pasta machine to shape tagliatelle pasta . The pasta modeled were pre-dried by storage in a low humidity environment from 30-32% to 18-17%. Individual pieces of tagliatelle pasta obtained have been obtained long, flat ribbons that are similar and were cut typically...
about 10 mm wide. The finished product has been tested by physico chemical and organoleptic characteristics.

**Results and Discussion.**

Regarding the aspect of quinoa pasta was observed to be smooth, without striations, no traces of flour, translucent, glassy aspect with reddish point particles intensely directly proportional with the intake of red quinoa flour. Regarding the boiling of quinoa pasta it was observed that pasta does not stick together, it does not form conglomerates, holds its shape. Water that has been boiled pasta was found to be slightly opalescent and without sediment.

The cooking time and water absorption were diminished in tagliatelle pasta by added red quinoa flour. Increases of physico chemical parameters like moisture content, protein content and acidity in tagliatelle pasta with the addition of red quinoa flour were observed, as can be seen in table 1.

Although the chemical and physical properties were directly proportional to addition of quinoa flour, the sensory properties were inversely proportional to adding flour as can be observed in Figure 1. Thus consumers preferred sample according to the sensory test (9 point Hedonic Scale) is variant V2 (QF:WF 15:85 %) followed by V3 (QF:WF 30:70 %) and less preferred was V4 (QF:WF 50:50 %).

**Conclusion.** In the present research work, we demonstrated that it can improve the quality of tagliatelle pasta type by adding quinoa flour in proportion of 15 % and 30% at the same time not to be affected the sensory properties.

**References**
