

## COMPARATIVE STUDY OF THE COMPOSITION AND PREPARATION OF NON-TRADITIONAL PASTA WITH A VEGETABLE ADDITIVES

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In this study, pasta was developed from wheat flour, pumpkin puree and soyabean flour. Different proportions of these composite were mixed. Other ingredients such as vegetable oil, salt and drinking water were added, mixed to form a uniform dough.

Pasta products, as staple foods, are expanding to meet the demands of contemporary living [1]. Pumpkin has a unique property because it contains antioxidants and vitamins, which allow it to have important protecting effects [2]. Soyabeans are high in protein, vitamins, and minerals ingredient, consumed worldwide. This is evidenced by data on the increase in their global production and consumption over the last few decades [3].

In this study, pasta was developed from wheat flour, pumpkin puree and soyabean flour. Different proportions of these composite were mixed. Other ingredients such as vegetable oil, salt and drinking water were added, mixed to form a uniform dough. Hand-operator pasta machine (Imperia) was used to cut pasta to preferable shape and dried at room temperature.

Chemical composition such as protein, total sugar level, moisture, and ash was determined for the obtained pasta samples. The protein content of the pasta made from a mixture of wheat and soyabeans was the highest, followed by a sample containing wheat flour and soyabean, as well as pumpkin puree. There was a difference between pasta with all the non-traditional ingredients and the control in terms of sugar contents. The results of water holding capacity, oil holding capacity, the optimal cooking time, weight, and volume increase were done to determine the cooking qualities of the pasta. Adding pumpkin puree to the dough increased the weight and volume of pasta compared to a sample made from only a mixture of wheat flour and soybean flour. Pasta with all the non-traditional ingredients absorbed more water than the control. The oil holding capacity ranged from 1.96 to 2.15, which was less compared to the control.

FTIR analysis was done to confirm the major functional groups in the developed pasta. This was done on both cooked and uncooked pasta at the wavelength ranging from 500 to 4000 cm<sup>-1</sup>. Total phenolic and antioxidant profile of cooked and uncooked pasta were conducted to highlight the bioactive compounds in pasta. This gives a clear indication that some of the bioactive compounds can be degraded thermally by leaching in cooking water. Therefore, incorporating non-traditional ingredients such as soyabean flour and pumpkin puree into pasta could be a promising way of developing improved pasta which is nutrient-rich and possess the functional properties.

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