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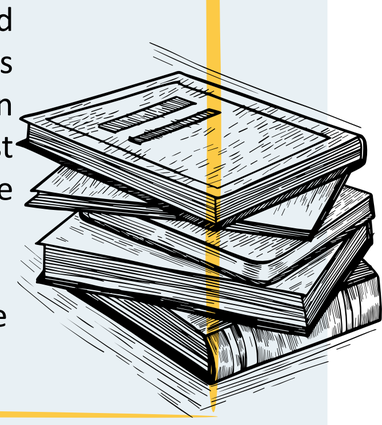
QUALITY CHARACTERISTICS OF PASTA ENRICHED WITH WILD GARLIC POWDER

INTRODUCTION:

Wild garlic *(Allium ursinum L.*) is a wild edible, spicy plant, very similar to garlic, whose exceptional healing properties have been known since ancient times. Due to the multitude of bioactive compounds that are extremely important for human nutrition, such as tannins, flavonoids, phenolic acids, phytosterols, carotenoids, vitamins and minerals, it can be considered as a potential carrier of food functionality.

Wild garlic is ideal for removing toxic substances that are stored in the body, and for antiseptic and antimicrobial action. Wild garlic stimulates the immune system, lowers cholesterol, lowers blood pressure and, is suitable for heart diseases. The modern eating habits of the population lead to an increase in the interest of the food industry in the placement of food products that have a beneficial effect on human health.

Therefore the main aim was to produce the functional paste enriched with wild garlic in a way which could potentially positive influence on human health.



METHOD / DESIGN:

- Pasta from durum wheat flour supplemented by wild garlic powder (WGP) at the ratio of 5%, 7%, and 9% was produced on electric pasta machine "Pasta Fresca„ (Fig. 1). Control sample was prepared from durum wheat flour.
- Technological quality properties of cooked pasta were measured by determining optimal cooking time (min), cooking loss (%) and swelling index (%). Additionally, the stickiness of pasta was determined using a TA-XT2 Texture Analyzer using P / 35 cylindrical probe and a 5 kg load cell (Fig. 2).
- Sample (100 g) was cooked in 1 l of boiling water. When, after squeezing the sample between two glass plates, the inner white core of the pasta disappeared, the optimal sneezing time was read.
- The loss during cooking was determined by gravimetric measurement of the residue after evaporation the cooking water and drying to dryness of the residue (130 ° C for 90 min).
- Cooked pasta was dried to constant weight at 103 °C and then swelling index was determined as (weight of cooked pasta)- (weight of pasta after drying)/ (weight of pasta after drying).

Figure 1.

Pasta enriched with 5%, 7% and 9% WGP, set to dry and form.

Figure 2.

Determining the stickiness of the paste using TA-XT2 Texture Analyzer .

RESULTS:

5% wild garlic powder	7% wild garlic powder	9% wild garlic powder

Figure 3. Cooked pasta enriched with 5%, 7% and 9% WGP

Table 1. Quality parameters of cooked pasta enriched with WGP

TECHOLOGICAL QUALITY OF COOKED PASTA

	COOKED PASTA			
	Optimal cooking time (min)	Cooking loss(%)	Swelling index	Stickiness (g*sec)
Control	13±1.0^{c}	6.10±1.14^{a}	3.47±0.30^{c}	41.90±3.58^{a}
5% WGP	5±1.0^{a}	7.42±0.01^{b}	2.43±0.03^{a}	72.28±1.95^{b}
7% WGP	7±1.0^{a}	6.15±0.02^{a}	2.29±0.02^{a}	64.54±0.73^{b}
9% WGP	10±1.0^{b}	8.20±0.18^{c}	2.86±0.07^{b}	76.40±9.04^{b}

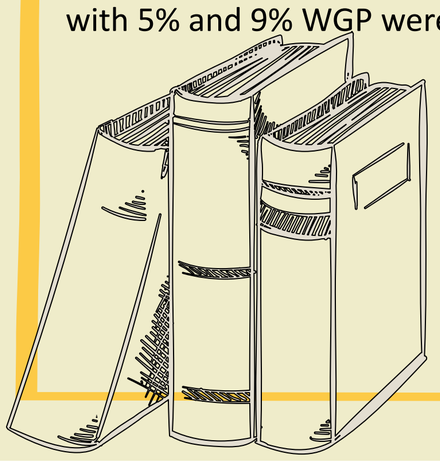
Figure 4. Cooked pasta enriched with WGP ready to try.

CONCLUSIONS:

The optimal cooking time for pasta with the addition of 5% and 7% WGP is less than 10 minutes, which is in line with today's lifestyle.

The cooking loss measured for pasta with 7% WGP was 6.15%, which is very similar to the control sample (6.10%), while losses in pasta with 5% and 9% WGP were slightly higher, 7.42% and 8.10%, respectively.

The largest measured value of the swelling index was in the control sample (3.47%). Swelling index with 7% WGP (2.29%) is lower than the control, while swelling index for paste with 5% and 9% WGP were 2.43% and 2.86%, respectively.



Stickiness of cooked pasta in the control sample was 41.9 g·sec, while the lowest value was in the sample with 7% WGP (64.54 g·sec). Higher values of the stickiness were determined in the sample with 5% and 9% WGP (72.28% and 76.40%, respectively).

In conclusion, taking into account all the above parameters of cooked pasta quality, the sample with 7% WGP is considered the optimal functional pasta with the addition of WGP.

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