Studies on Valorification of Hot Pepper Powder in the Technology of Jelly Candy Products

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Abstract
In order to diversification of jellies and increasing segment of consumers it was intended to valorification a raw material such as hot pepper powder. The products obtained at Sugar Confectionery Pilot Station of University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca was the result of original recipe.

Objective of the study was to investigate potential use of hot pepper powder in jelly candies, by phisico chemical analyses and general consumer’s acceptance. Sensory analyses were conducted on two kinds of sweet jellies. The hot pepper powder were used at concentration of 0.5% and 1.0%. Sensory analyses included evaluation of overall appearance, colour, taste, aroma, consistenc (5 point hedonic scale). Present study indicated that 0.5 % added of hot pepper powder were accepted by consumers.

Keywords: hot pepper, powder, sensory analysis, jelly candy

Introduction. It is known that hot pepper is a stimulant and antiseptic containing a high amount of vitamin C and beta-carotene, it causes rapid burning of fat in the body, acts as an expectorant, it has a coagulant effect, it has a positive effect on the vocal cords and it has anti-inflammatory effect as well. Hot pepper powder was chosen in obtaining jelly for several reasons including: a specific taste, slightly spicy due to the content of capsaicin, a natural color given by the red pigment of capsanthin, which offers the jelly a natural, pleasant texture and feel.

Aims and objectives. The aim of this study was to outline the practical ways to used hot pepper powder in jelly type products and find these types in consumer acceptability by sensory analysis.

Materials and methods. All raw materials used in these experiments have been purchased from specialized stores.

To optimize the recipe have been achieved two experimental variants.

Jelly candy with hot pepper powder was obtained using a original recipe adapted into a micro scale production, resulting two prototypes: jelly with 0.5% and 1% added hot pepper powder. The producing recipe contains the following ingredients: sugar I (200 gr.), pectin (39.2 gr.), water (672 ml.), sugar II (830.4 gr.), glucose (649.6 g.), citric acid (30%), hot pepper added (0.5% and 1%).

Description of production process of jelly candy products is presented in the following steps:

1. The pectin was dry blended with granulated sugar in a ratio of 1:2. The mixture was dissolved in cold water in an amount of 25 times greater based on the weight of pectin. Is added sugar and glucose syrup recipe and made under both boiling until the solution has a concentration of 70 Bx. The hot mass are inserted desired amount of paprika (0.5% and 1%) and acid to PH 2.9-3.2. Follows casting into shapes starch jellies surgery that
kept 6-8 hours at a temperature of gelation 10-15˚C in order. Jelly roll in granulated sugar. At this time their surface covered with granulated sugar crystals which gives them a more attractive while protecting them. Jellies are packed in cardboard boxes of various weights and celolofan or plastic bags.

The experimental variants was physico-chemical analyzed (both for powder and finished product) : length, width, thickness, specific gravity, moisture and carbohydrates.

The sensory attributes, were evaluated by a group of un-trained panelists, using a 5-point Hedonic scale.

**Results and Discussion.** Mean values of physico-chemical parameters such as the hot pepper and jelly with hot pepper powder, are in the limits specified by the literature, with the result that they meet quality requirement in the content of moisture, ash, dry matter, soluble extract, acidity and sugar content.

Regarding the sensory analysis, the hedonic test was applied and resulted that jelly with added of 0.5 % hot pepper was preferred by consumers.

The results showing the quality parameters are presented in table 1.

**Conclusion.** In order to obtain jelly candy products with hot pepper is recommended the concentration of 0.5% powder as it prints a specific taste slightly spicy jelly with the capsaicin content, and given the natural color from the red pigment capsanthin jelly gives a natural look pleasant, attractive to the consumer.

**References**


**Tab.1. Quality parameters followed to the jelly candy.**

<table>
<thead>
<tr>
<th>Experimental variants</th>
<th>Dry matter (%)</th>
<th>Ash content (%)</th>
<th>Soluble extract (%)</th>
<th>Acidity (citric acid)</th>
<th>Total sugar (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>J05 (0.5 % hot pepper added)</td>
<td>85.37</td>
<td>0.1819</td>
<td>71.93</td>
<td>0.209</td>
<td>61.9</td>
</tr>
<tr>
<td>J1 (1% hot pepper added)</td>
<td>83.78</td>
<td>0.6079</td>
<td>72.02</td>
<td>0.213</td>
<td>61</td>
</tr>
</tbody>
</table>

**Fig. 1.** Sensory analysis-5 point hedonic scale

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