

EXPERIMENTAL DATA OF QUALITY INDICATORS OF PECTIN-CONTAINING JAM

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Abstract. Experimental data about results of researches of influence of a dosage on physical and chemical indicators of pumpkin confiture are provided. It is established that the best indicators are reached at a dosage of 1.0% to confiture weight.

Keywords: Pumpkin pectin, technology, confiture, boiling.

ВАРЕНЬЕНИН КУРАМЫНДАГЫ ПЕКТИНДИН САПАТЫНЫН ЭКСПЕРИМЕНТТИК КӨРСӨТКҮЧТӨРҮНҮН МААЛЫМАТЫ

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Аннотация. Дозанын таасирин изилдөө натыйжалары боюнча эксперименталдык маалыматтар ашкабак конфетинин физикалык-химиялык көрсөткүчтөрү. Эң жакшы көрсөткүчкө вареньенин салмагы 1,0% өлчөмүндө жетишкендиги аныкталды.

Ачкыч сөздөр: ашкабак пектин, технология, конфит, тамак бышыруу.

ЭКСПЕРИМЕНТАЛЬНЫЕ ДАННЫЕ ПОКАЗАТЕЛЕЙ КАЧЕСТВА ПЕКТИН-СОДЕРЖАЩЕГО ВАРЕНЬЕ

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Аннотация. Приведены экспериментальные данные о результатах исследований влияния дозировки на физико-химические показатели тыквенного конфитюра. Установлено, что наилучшие показатели достигаются при дозировке 1,0% к массе конфитюра.

Ключевые слова: тыквенный пектин, технология, конфитюр, варка.

Preservation of vegetables and fruits by freezing, drying, boiling with sugar, antiseptics, pasteurization, sterilization has a number of disadvantages, the main of which is the reduction of the nutritional value of the product, the loss of the original taste and aroma. Therefore, the preservation of the native properties of berries and fruits and the development on their basis of jams of increased nutritional and biological value is an urgent task.

In the amount of sugar, this jelly-like product is similar to jam or jam. But unlike them, the consistency of the jam is more dense, not greased. In addition, the fruits in it retain their shape and

are distributed throughout the mass (in jam they are completely softened or deformed).

The technology of industrial production of this delicacy assumes introduction at some point of citric acid and pectinacious solution in hot weight [1].

In the test tube were taken five samples of pumpkin fruit varieties Aphrodite, sugar, citric acid, dry pumpkin pectin, spices to taste (in our case, used cinnamon powder).

Pumpkin is also cleaned of seeds, cut into small pieces of size 7-10 mm and put in hot water for scalding. The water temperature corresponded to 85-90 °C, the scalding process was about 3 minutes.

With the aim of preserving the native properties of pumpkin and plan further introduction to the composition of marmalade the pectin which causes gelation a given mass, we reduced the boiling process when the temperature of the mixture $T=85-100$ °C, for 20 mins instead of 25-30 mins according to the classical scheme. Recommendations of other researchers on cooking jams are based mainly on berries, which have a dense, not broken thin rind, and cut pieces of pumpkin do not have a thin rind, so the cooking process was reduced. After 20 minutes of boiling, citric acid in an amount of 1.0% and sugar – pectin mixtures in different amounts were added to all prototypes of the confiture mass in relation to the initial mass of the pumpkin.

Options of a dosage of pumpkin pectin in confiture weight are presented in digram.

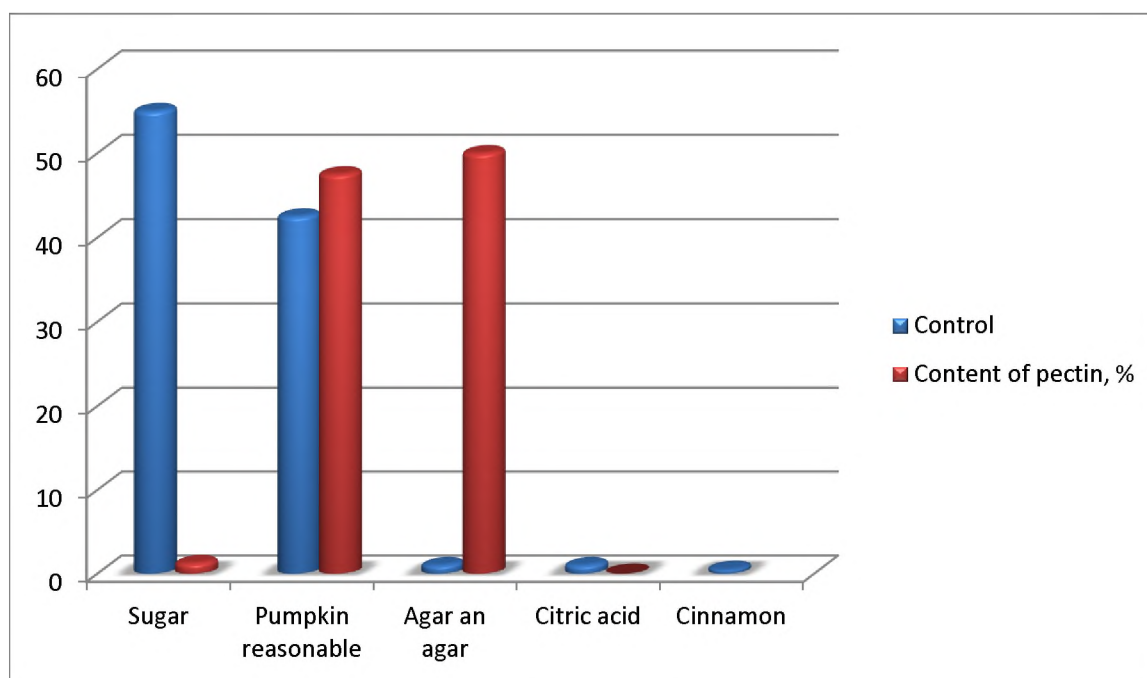


Diagram 1 - Compounding's of pumpkin confiture with various content of pectin.

The dosage of the acid was due to extreme acidity values in the target product. It is known that in order to obtain a stable jelly consistency and prevent syneresis, the pH of the finished product should be 3,0-3,3 [2]. The process of boiling the candy mass is carried out to a solids content of 58.0-58.5% after the addition of a sugar-pectin mixture. Then before the end of boiling add cinnamon in numbers 0.5% for settings. The pH of the product ranged from 3.0 to 3.6, and the color of the product varied from light yellow to dark yellow with a brownish tinge. As can be seen from table 1, with an increase in the content of pectin, the amount of sugar used decreases.

Experimental data of physical and chemical parameters of five samples of jam with different pectin content (0.5-1.5%) are given in table 2. The tables show that the best quality indicators are achieved in the sample number 3 with a pectin content of 1.0% [3,6]. The product was characterized by a bright orange-yellow color, the dry matter content in the product was 58.1% and 3.3%, respectively. At the same time, with such a dosage of pectin, the sugar content in the jam decreased by 7.5% compared to the control.

At dosages of pectin 1.25 and 1.5 % (samples 4 and 5), there was a deterioration in the color of the product to an unpleasant dark yellow with a brown tinge (table.1). When pectin is added to the jam 2.0 percent or more, premature solidification occurs.[7]

Table 1 – The effect of pectin dose on the physico-chemical characteristics of pumpkin jam.

№ of a sample/content of pectin, %	Changes in physical and chemical parameters				
	SV, %	Titrateable acidity of %	Vitamin C, % mg	Carotene, the % mg	Reducing sugar of %
1/0,5	57,9	2,8	8,0	10,1	12,65
2/0,75	58,0	2,7	8,3	10,6	12,50
3/1,0	58,1	2,6	8,6	11,0	12,20
4/1,25	58,4	2,5	9,0	11,5	12,00
5/1,5	58,9	2,4	9,1	11,6	12,00

Thus, based on the results of experimental studies, it can be concluded that it is advisable to use pumpkin pectin in the amount of 1.0% in the production of jams.

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