SENSORY PROPERTIES OF DAIRY PRODUCTS BASED ON FRESH CHEESE AND FRUIT

ORIGINAL SCIENTIFIC PAPER

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ABSTRACT: Fermented dairy products are the favorite food of most consumers of all ages. To increase nutritional value, many fermented dairy products are mixed with grains and other additives. Fresh cheeses can be mixed with canned or dried vegetables and fruits and spices. The aim of the work was to produce a cheese dessert with different fruits in order to bring this product closer to the younger population, especially children. Fresh cheese samples were produced from skimmed milk (0.9% milk fat) and partially skimmed milk (1.5% milk fat). The obtained fresh cheese was mixed with compote fruit pineapple, peach and pear, in order to obtain the cheese dessert. Poppy, peach and poppy compositions were used as fruit additives. The sensory properties of the cheese dessert were evaluated by a group of 15 analysts. Dessert samples were evaluated after 1, 5 and 10 day of storage.

Samples of fermented dairy products from the milk with 1.5% milk fat had a better consistency, pronounced aroma and a fuller taste during the storage.

Sensory properties of the dairy products based on fresh cheese and pineapple were most pronounced, with the sum of points ranging from 18.15 to 19.65, compared to the addition of peach and pear. Statistically analysis showed that the best samples were based on fresh cheese and pineapple.

KEYWORDS: fresh cheese, fruit, sensory properties

INTRODUCTION

Fresh cheeses are cheeses produced by coagulation of milk, cream or whey by acid, a combination of acid and rennet, or a combination of acid and heat. Fresh cheeses are ready for consumption immediately after production. The type of fresh soft cheese often mixed with cream and sometimes with fruit or spices is referred to as creamy cheese (quark, orchard and others). The standard for this cheese is different, so it can be produced with 14 - 24% dry matter. Quark (Quarg) is a fresh cheese originating in Eastern Europe. It is a soft white cheese, usually containing less fat (roughly like yogurt) than cheese cream[1]. Microorganisms play an essential role in cheese production because they contribute to the formation of sensory properties due to their metabolism[2]. Fresh cheeses have high moisture content, mild flavour, soft and smooth texture[3]. Many dairy fermented products are mixed with grains and other additives to provide higher nutritionally balanced food[4]. During the production, fresh cheeses can be mixed with canned or dried vegetables or fruits and spices. Vegetables can be added in fresh state, pasteurized or sterilized, in pieces or as a casserole. Choi et al.[5] examined the properties of Gouda cheese with the addition of fruit liqueur, which was added during production. They came to the conclusion that the addition of fruit liqueur did not affect (P>0.05) the appearance or sensory characteristics of the cheese produced, but the higher values of ashes, minerals and flavonoids (P<0.05) were observed than in the control sample of the cheese. Also, the results of their work indicate that such supplements in cheese provide additional nutrients, retaining taste and quality. According to Khalifa and Wahdan[6] cranberry extract can be used as a functional ingredient that improves cheese stability during storage. During the study, the influence of addition of three different concentrations of cranberry extract (500, 750 and about 1000 ppm) was investigated on chemical composition, maturation index, oxidation stability and microbiological as well as organoleptic properties of white soft cheese. The research has shown that the addition of the cranberry extract at a concentration of 750 ppm significantly improves and maintains cheese quality. Various polyphenolic compounds to cheese, individual phenolic compounds, including catechins, epigalocatein galata (EGCG), tannic acid, homovanilic acid and flavones together with natural compounds such as grape extracts, green tea extract and dehydrated cranberry powder are added as functional ingredients during the process of cheese production[7]. According to a study conducted by Yerlikaya and Karagozlu[8], the Caper berry supplement in white cheese positively affects some of the physical-chemical properties of cheese, while some have no positive influences. Berries were

added to the cheese after cutting the cheese, in an amount of 8 g of berries/100 g of raspberries. The results showed significant differences in the content of salt, lactic acid and mineral constituents (P<0.05), in contrast to the sample in which no berries were added.

In this paper, the fruit pineapple, peach and pear is added to fresh cheese in order to obtain cheese desserts of different flavour variations and thus offer a product that would approach consumers, especially children, who are eating more and more unhealthy foods at the time.

MATERIAL AND METHODS

MATERIALS

Production prototypes of milk based products with fresh cheese and fruits were conducted in the laboratory of Food Technology, Faculty of Technology, University of Tuzla. For the production of fresh cheese, commercial UHT cow milk (Meggle) with 0.9% (M1) and 1.5% (M2) milk fat was used. For direct inoculation of milk, FD-DVS cultures were used: CHN-22, XT-303 and combination CHN-22 and Lyofast SAB 440B in ratio 2:1.

CHN-22 in composition:
Lactococcus lactis ssp. *lactis*
Lactococcus lactis ssp. *cremoris*
Lactococcus lactis ssp. *lactis* biovar *diacetylactis*
Leuconostoc mesenteorides ssp. *cremoris*
Streptococcus thermophilus

XT–303 in composition:
Lactococcus lactis ssp. *lactis*
Lactococcus lactis ssp. *cremoris*
Lactococcus lactis ssp. *lactis* biovar *diacetylactis*
Leuconostoc mesenteorides ssp. *cremoris*
Leuconostoc pseudomesenteorides

CHN – 22 : Lyofast SAB 440B = 2:1
Lyofast SAB 440 B in composition:
Streptococcus thermophilus
Lactobacillus acidophilus
Bifidobacterium animals ssp.*lactis*

As fruit supplement, pasteurized compote of pineapple (V_1), peach (V_2) and pear (V_3), in light syrup (Iska Qualität, I. Schroeder KG, Germany) was used. The addition of fruit was carried out by a selected formulation (25% of fruit to the weight of cheese). The milk was thermally processed at a temperature of 75°C/30 sec, cooled to an inoculation temperature (25°C), primed with microbial starter cultures. The fermentation lasted between 11 and 12 hours at 25°C until a pH value of 4.6-4.7 was reached. Subsequently, curd was cut, cooled and squeezed through cotton fabrics for about 8 hours at 20°C. After finishing the curd draining, the fresh cheese was well ho-

mogenized in the mixer and divided into 3 parts. One type of chopped fruit was added into each part, pineapple, peach and pear, respectively. The obtained products were stored in a refrigerator in a plastic container for 10 days at + 4°C. The sample markings, milk fat content, type of microbial crops and the types of fruit used in the laboratory production of cheese desserts are shown in Table 1.

Table 1. Samples of dairy products based on fresh cheese and fruit

Samples	Milk fat (%)	Starter culture	Fruit
M_1K_1A		CHN -22	Pineapple
M_1K_1B			Peach
M_1K_1K			Pear
M_1K_2A	0.9	XT - 303	Pineapple
M_1K_2B			Peach
M_1K_2K			Pear
M_1K_3A		CHN – 22: Lyofast SAB 440 B = 2:1	Pineapple
M_1K_3B			Peach
M_1K_3K			Pear
M_2K_1A		CHN -22	Pineapple
M_2K_1B			Peach
M_2K_1K			Pear
M_2K_2A	1.5	XT - 303	Pineapple
M_2K_2B			Peach
M_2K_2K			Pear
M_2K_3A		CHN – 22: Lyofast SAB 440 B = 2:1	Pineapple
M_2K_3B			Peach
M_2K_3K			Pear

The sensory properties of samples of milk products based on fresh cheese and fruits were evaluated by a group of 15 assessors using a scoring method (Table 2), after 1, 5 and 10 days of storage[9].

STATISTICAL ANALYSIS

Analysis of variance (ANOVA) was carried out using SPSS software (version 22). Duncan test was used to determinate which samples were statistically different by all the sensory properties and acceptability of product (P<0.05).

RESULTS AND DISCUSSION

The acidic coagulation of milk from the laboratory production of fresh cheese, irrespective of the proportion of milk fat, was approximately equal in all samples (11:50 - 12 hours) as shown in Figure 1.

Table 2. Sensory properties of dairy products based on fresh cheese and fruit

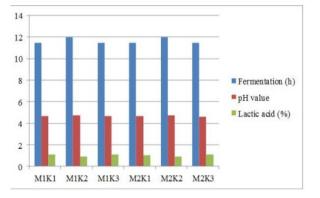| Properties	Characteristics	Score
External appearance	The surface of the cheese is uniformly white to light-colored and completely pure without ripening, does not release whey, with noticeable fragments of fruit.	2
	On the surface there is barely noticeable impurities. It releases a little bit of whey. Poor noteful pieces of fruit.	1
	On the surface noticeable impurities. Appearing on the side of the paint, it releases the whey with no fragments of fruit. More white stains, molds and mucus.	0
Consistency	A dough of cheese without chops, with tiny pieces of fruit	4
	Dough of cheese with little bushes, slightly dull, slightly sticky, conductive pieces of fruit	3
	Dough of cheese with little bushes, stronger gum, stronger sticky, slightly mushy, trace fruit	2
	Dough of cheese with little bruise, stronger gum, stronger sticky, very fleshy	1
	Consistency errors are very pronounced.	0
Smell	Pure, characteristic of the type of fruit added, slightly acidic and without foreign appendage	3
	Clean, characterized by the type of fruit added and no foreign appendages	2
	With foreign admixtures, stronger acidity and weaker fruity aroma	1
	Errors smell more pronounced and without fruity flavor	0
Taste	Pure, slightly acidic, pronounced taste of added fruit, very aromatic	9
	Slightly sweet, aromatic and slightly less pronounced taste of fruit	8
	Strongly acidic, indefinite, the taste of fruit is poorly expressed	7
	Acidy, a bit unclean, little by the cook, the taste of fruit is not present	6
	Slight bitter taste	4-5
	Bitter, metallic, musty	2-3
	Errors taste are very pronounced	0-1
Colour	The cheese has a uniform white to pale yellow, free of impurities.	2
	Uneven white to light-colored color without impurities.	1
	The mistakes are more pronounced, with foreign colors, very unclean.	0

Figure 1. Parameters of laboratory fermentation of milk samples with 0.9% and 1.5 % milk fat

The shorter fermentation time had variations of the fresh cheese produced using the starter culture CHN-22 and the mixture of CHN - 22 and Lyofast SAB 440 B in the ratio of 2:1. Slightly longer fermentation and higher pH at the end of the fermentation showed cheese variations with the microbial starter culture XT - 303 (pH 4,7) irrespective of the proportion of milk fat in milk from which fresh cheese was produced. This may be due to a reduced activity of the microbial starter culture since the fermentation lasted for a long time.

The average values of sensory properties of milk product samples based on fresh cheese and fruits are shown in Tables 3, 5, 7, 9, 11.

The variance analysis - data of sensory properties are shown in Tables 4, 6, 8, 10, 12 and 14. Structural and textural properties of dairy products are the primary criterion of their quality assurance. Sensory properties such as appearance, taste, smell, texture and consistency are essential quality parameters that change during storage due to the composition of milk, fatty acid content, production conditions and the like[10]. In many markets, fruit, sweeteners and spices are added and largely determine the sensory properties of these products[11]. The variance analysis (Tables 4, 6, 8, 10, 12 and 14) shows that there is a statistically significant difference between the samples for exterior appearance, consistency, odour and taste, since the calculated F-quotient has a greater value than the limit value read from the statistical tables, the fact that $P<0.05$ is also supported. Considering the statistically significant difference ($P<0,05$), the Duncan test was conducted by which it was determined which samples were the best by certain sensory properties also during the storage. Almost all of the samples had a good external appearance throughout 10 days of storage.

Table 3. Average values of sensory properties of milk product based on fresh cheese and fruits using milk with 0.9 % milk fat after 1 day of storage

Samples	External appearance (2.0)	Consistency (4.0)	Smell (3.0)	Taste (9.0)	Colour (2.0)	Σ (20.0)
M_1K_1A	2.00^2	3.16^3	3.00^5	8.16^5	2.00	18.32
M_1K_1B	2.00^2	3.00^2	$2.5^{1,2}$	$7.5^{1,2}$	2.00	17.00
M_1K_1K	1.93^1	3.00^2	$2.58^{2,3}$	7.69^3	2.00	17.20
M_1K_2A	2.00^2	3.66^4	2.83^4	8.24^5	2.00	18.73
M_1K_2B	2.00^2	3.66^4	$2.91^{4,5}$	7.41^1	2.00	17.98
M_1K_2K	2.00^2	3.66^4	3.00^5	7.83^4	2.00	18.49
M_1K_3A	2.00^2	2.83^1	2.66^3	8.66^6	2.00	18.15
M_1K_3B	2.00^2	3.00^2	2.41^1	$7.58^{2,3}$	2.00	16.99
M_1K_3K	2.00^2	2.83^1	2.83^4	8.25^5	2.00	17.91

[1,2,3,4,5,6] - Mean values in the same column, with different superscript are significantly different (P<0.05)

Table 4. Analysis of variance of data from Table 3

		Sum of Squares	Df	Mean square	F	p
External appearance	Between Groups	0.065	8	0.008	1470,00	0.000
	Within Groups	0.007	126	0.000		
	Total	0.072	134			
Consistency	Between Groups	15.453	8	1.932	93.538	0.000
	Within Groups	2.602	126	0.021		
	Total	18.055	134			
Smell	Between Groups	5.676	8	0.709	27.166	0.000
	Within Groups	3.291	126	0.026		
	Total	8.967	134			
Taste	Between Groups	21.459	8	2.682	82.043	0.000
	Within Groups	4119	126	0.033		
	Total	25.578	134			
Colour	Between Groups	0.000	8	0.000		
	Within Groups	0.000	126	0.000		
	Total					

$F_{0.05}(8/126)=0.063$

Table 5. Average values of sensory properties of milk product based on fresh cheese and fruits using milk with 0.9 % milk fat after 5 day of storage

Samples	External appearance (2.0)	Consistency (4.0)	Smell (3.0)	Taste (9.0)	Colour (2.0)	Σ (20.0)
M_1K_1A	1.96^2	3.26^1	2.89^4	8.37^5	2.00	18.48
M_1K_1B	2.00^2	3.16^1	2.50^1	7.16^1	2.00	16.82
M_1K_1K	2.00^2	$3.58^{2,3}$	2.91^4	7.83^3	2.00	18.32
M_1K_2A	2.00^2	$3.58^{2,3}$	$2.66^{2,3}$	$8.50^{5,6}$	2.00	18.74
M_1K_2B	2.00^2	3.66^3	2.75^3	7.41^2	2.00	17.82
M_1K_2K	1.91^1	$3.58^{2,3}$	2.91^4	8.08^4	2.00	18.48
M_1K_3A	2.00^2	3.66^3	2.91^4	8.66^6	2.00	19.23
M_1K_3B	2.00^2	3.50^2	$2.58^{1,2}$	$7.91^{3,4}$	2.00	17.99
M_1K_3K	2.00^2	$3.58^{2,3}$	3.00^4	8.33^5	2.00	18.91

[1,2,3,4,5,6] - Mean values in the same column, with different superscript are significantly different (P<0.05)

Table 6. Analysis of variance of data from Table 5

		Sum of Squares	df	Mean square	F	p
External appearance	Between Groups	0.113	8	0.014	5.160	0.000
	Within Groups	0.344	126	0.003		
	Total	0.457	134			
Consistency	Between Groups	3.695	8	0.462	12.456	0.000
	Within Groups	4.672	126	0.037		
	Total	8.368	134			
Smell	Between Groups	3.681	8	0.460	15.968	0.000
	Within Groups	3.630	126	0.029		
	Total	7.311	134			
Taste	Between Groups	30.358	8	3.795	39.034	0.000
	Within Groups	12.249	126	0.097		
	Total	42.607	134			
Colour	Between Groups	0.000	8	0.000	.	.
	Within Groups	0.000	126	0.000		
	Total	0.000	134			

$F_{0.05}(8/126)=0.063$

Table 7. Average values of sensory properties of milk product based on fresh cheese and fruits using milk with 0.9 % milk fat after 10 day of storage

Sample	External appearance (2.0)	Consistency (4.0)	Smell (3.0)	Taste (9.0)	Colour (2.0)	Σ (20.0)
M_1K_1A	1.93^2	3.41^2	$2.83^{3,4}$	8.40^5	2.00	18.57
M_1K_1B	1.93^2	3.33^1	2.50^1	7.50^2	2.00	17.26
M_1K_1K	1.93^2	3.58^3	3.00^5	7.75^3	2.00	18.26
M_1K_2A	1.58^1	3.75^4	$2.75^{2,3}$	8.58^6	2.00	18.66
M_1K_2B	1.50^1	3.83^4	2.66^2	7.25^1	2.00	17.24
M_1K_2K	1.58^1	3.75^4	$2.91^{4,5}$	$8.25^{4,5}$	2.00	18.49
M_1K_3A	2.00^2	3.82^4	2.99^5	8.74^6	2.00	19.55
M_1K_3B	2.00^2	3.41^2	2.41^1	$7.58^{2,3}$	2.00	17.4
M_1K_3K	2.00^2	3.83^4	$2.91^{4,5}$	8.16^4	2.00	18.9

[1,2,3,4,5,6] - Mean values in the same column, with different superscript are significantly different (P<0.05)

Table 8. Analysis of variance of data from Table 7

		Sum of Squares	df	Mean square	F	p
External apearance	Between Groups	5.258	8	0.657	56.148	0.000
	Within Groups	1.475	126	0.012		
	Total	6.733	134			
Consistency	Between Groups	5.029	8	0.629	58.623	0.000
	Within Groups	1.351	126	0.011		
	Total	6.380	134			
Smell	Between Groups	5.407	8	0.676	19.261	0.000
	Within Groups	4.421	126	0.035		
	Total	9.828	134			
Taste	Between Groups	32.751	8	4.094	67.136	0.000
	Within Groups	7.683	126	0.061		
	Total	40.434	134			

$F_{0.05}(8/126)=0.063$

Table 9. Average values of sensory properties of milk product based on fresh cheese and fruits using milk with 1.5 % milk fat after 1 day of storage

Sample	External appearance (2.0)	Consistency (4.0)	Smell (3.0)	Taste (9.0)	Colour (2.0)	Σ (20.0)
M_2K_1A	2.00	4.00^3	2.91^2	8.16^3	2.00	17.07
M_2K_1B	2.00	3.83^2	2.58^1	7.75^1	2.00	16.16
M_2K_1K	2.00	4.00^3	2.91^2	8.41^4	2.00	17.32
M_2K_2A	2.00	3.66^1	2.91^2	8.50^6	2.00	17.07
M_2K_2B	2.00	3.66^1	3.00^2	7.66^2	2.00	16.32
M_2K_2K	2.00	3.66^1	2.82^2	7.83^2	2.00	16.31
M_2K_3A	2.00	4.00^3	2.50^1	8.25^4	2.00	16.75
M_2K_3B	2.00	$3.75^{1,2}$	2.25^1	7.83^2	2.00	15.83
M_2K_3K	2.00	3.83^2	2.66^1	8.41^4	2.00	16.90

[1,2,3,4,5,6] - Mean values in the same column, with different superscript are significantly different (P<0.05)

Table 10. Analysis of variance of data from Table 9

		Sum of Squares	df	Mean square	F	p
External appearance	Between Groups	0.000	8	0.000		
	Within Groups	0.000	126	0.000		
	Total	0.000	134			
Consistency	Between Groups	2.686	8	0.336	19.311	0.000
	Within Groups	2.191	126	0.017		
	Total	4.877	134			
Smell	Between Groups	7.353	8	0.919	82.506	0.000
	Within Groups	1.404	126	0.011		
	Total	8.757	134			
Taste	Between Groups	12.586	8	1.573	140.632	0.000
	Within Groups	1.410	126	0.011		
	Total	13.996	134			
Colour	Between Groups	0.000	8	0.000		
	Within Groups	0.000	126	0.000		
	Total	0.000	134			

$F_{0.05}(8/126)=0.063$

Table 11. Average values of sensory properties of milk product based on fresh cheese and fruits using milk with 1.5 % milk fat after 5 day of storage

Sample	External appearance (2.0)	Consistency (4.0)	Smell (3.0)	Taste (9.0)	Colour (2.0)	Σ (20.0)
M_2K_1A	2.00	3.83^3	2.91^5	8.33^5	2.00	19.07
M_2K_1B	2.00	3.66^2	2.66^3	7.83^2	2.00	18.15
M_2K_1K	2.00	3.83^3	2.75^4	8.16^4	2.00	18.74
M_2K_2A	2.00	3.58^2	2.91^5	8.58^6	2.00	19.07
M_2K_2B	2.00	3.66^2	2.91^5	8.00^3	2.00	18.57
M_2K_2K	2.00	3.66^2	2.91^5	8.16^4	2.00	18.73
M_2K_3A	2.00	3.58^2	$2.58^{2,3}$	8.00^3	2.00	18.16
M_2K_3B	2.00	3.58^2	2.50^2	7.66^1	2.00	17.74
M_2K_3K	2.00	3.41^1	2.33^1	8.16^4	2.00	17.90

[1,2,3,4,5,6] - Mean values in the same column, with different superscript are significantly different (P<0.05)

Table 12. Analysis of variance of data from Table 11

		Sum of Squares	df	Mean square	F	p
External appearance	Between Groups	0.000	8	0.000	.	.
	Within Groups	0.000	126	0.000		
	Total	0.000	134			
Consistency	Between Groups	2.055	8	0.257	10.250	0.000
	Within Groups	3.158	126	0.025		
	Total	5.213	134			
Smell	Between Groups	5.534	8	0.692	53.873	0.000
	Within Groups	1.618	126	0.013		
	Total	7.152	134			
Taste	Between Groups	8.721	8	1.090	43.839	0.000
	Within Groups	3.133	126	0.025		
	Total	11.855	134			
Colour	Between Groups	0.000	8	0.000	.	.
	Within Groups	0.000	126	0.000		
	Total	0.000	134			

$F_{0.05}(8/126)=0.063$

Table 13. Average values of sensory properties of milk product based on fresh cheese and fruits using milk with 1.5 % milk fat after 10 day of storage

Sample	External appearance (2.0)	Consistency (4.0)	Smell (3.0)	Taste (9.0)	Colour (2.0)	Σ (20.0)
M_2K_1A	2.00^3	4.00^3	3.00^4	8.50^5	2.00	19.5
M_2K_1B	1.83^1	3.66^1	2.58^2	7.83^2	2.00	17.9
M_2K_1K	1.83^1	3.83^2	2.58^2	8.33^4	2.00	18.57
M_2K_2A	1.91^2	$3.91^{2,3}$	2.83^3	9.00^6	2.00	19.65
M_2K_2B	1.83^1	4.00^3	2.58^2	7.66^1	2.00	18.07
M_2K_2K	2.00^3	3.83^2	$2.91^{3,4}$	8.16^3	2.00	18.9
M_2K_3A	2.00^3	4.00^3	2.66^2	8.50^5	2.00	19.16
M_2K_3B	1.83^1	3.66^1	2.33^1	7.66^1	2.00	17.48
M_2K_3K	2.00^3	3.83^2	2.66^2	8.16^3	2.00	18.65

[1,2,3,4,5,6] - Mean values in the same column, with different superscript are significantly different (P<0.05)

Table 14. Analysis of variance of data from Table 13

		Sum of Squares	df	Mean square	F	p
External appearance	Between Groups	0.867	8	0.108	13.840	0.000
	Within Groups	0.987	126	0.008		
	Total	1.854	134			
Consistency	Between Groups	2.159	8	0.270	20.365	0.000
	Within Groups	1.670	126	0.013		
	Total	3.829	134			
Smell	Between Groups	4.966	8	0.621	31.502	0.000
	Within Groups	2.483	126	0.020		
	Total	7.449	134			
Taste	Between Groups	23.396	8	2.924	173.866	0.000
	Within Groups	2.119	126	0.017		
	Total	25.515	134			
Colour	Between Groups	0.000	8	0.000		
	Within Groups	0.000	126	0.000		
	Total	0.000	134			

$F_{0.05}(8/126)=0.063$

Some samples had better ratings for the consistency, smell and flavour on the 10th day of storage. The cause of the lower estimate of the external appearance of some samples was due to the small amount of extracted whey on the surface of the sample, which was noticed after 10 days of storage. Consistency in most samples was enhanced during storage, as well as the smell, taste, which were typical by the types of fruit that was added. Reduced fat content in milk, later in the cheese resulted in a lower content of forming fatty acids and other aromatic compounds that are important for the taste and smell of cheeses[12]. The colour of all samples remained unchanged, regardless of the content of milk fat, type of microbial starter cultures or types of fruits present in samples, so it can be considered as most stable properties. Samples derived from milk with 1.5% milk fat were obtained using the mesophilic culture CHN-22 and a combination of mesophilic and probiotic Lyofast SAB 440B, achieved significantly higher scores compared to culture XT-303. Higher content of milk fat had a positive influence on consistency and better taste of the cheese dessert. The samples of products based on fresh cheese and pineapple were best assessed. The consistency of pineapple itself inside of a milk product was not altered during the storage. Some of them had a maximum scores for certain sensory properties of 10th day of storage (M_2K_1A i M_2K_3A). The samples of milk product based on fresh cheese and pear as well fresh cheese and peach achieved a bit lower scores, compared to the samples with pineapple. The consequence of that was hard and grainy texture of pear that did not fit in well with the overall feel of milk products. Smell and taste of pears were not fully expressed. Further, samples of milk products based on fresh cheese and peach had the lowest sum of total points for sensory properties (16.82-17.8). The reason of that was not sufficiently expressed smell and taste, a softer consistency of peaches that changed during storage of milk product.

CONCLUSION

For the production of a fermented milk product based on fresh cheese and fruits, skimmed milk with 0.9% milk fat and partially skimmed milk with 1.5% milk fat was used. Fermentation of milk was carried out at a temperature of 25 C up to pH 4.6 – 4.7, with implementation of FD-DVS starter cultures (CHN-22 iXT-303) and mixture of starter cultures CHN-22 and Lyofast SAB 440 B in ratio 2:1. Compotes of pineapple, peaches and pears were used as fruit additives. The samples of fermented milk product from milk

with 1.5% milk fat had a better consistency, pronounced aroma and fuller taste during storage. Sensory properties of the milk product based on fresh cheese and pineapple were the most pronounced, with the sum of points between 18.18–19.65, compared to the addition of peach and pear. Addition of pineapple in samples, application of culture CHN-22 and combination with probiotic had most influence on the average scores of 8.66, compared to the peach (7.34) and pear (7.69).

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