

Lactobacillus acidophilus LA-5, Lactobacillus casei431

(1) (1)

Lactobacillus acidophilus LA-5, Lactobacillus casei431
/ 1.4×10^7 2.6×10^7

0.05
(control)

...

Manufacturing Processed Spread Cheese Supplemented with Probiotic Bacteria *Lactobacillus acidophilus LA-5, Lactobacillus casei 431*

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ABSTRACT

Two strains of probiotic bacteria were used in this study for supplying processed spread cheese which are: *Lactobacillus acidophilus LA-5, Lactobacillus casei 431*. Their total count after eight weeks of refrigerated storage was 1.4×10^7 and 2.6×10^7 cell /g consequently. These numbers are higher than recommended ones to show the positive impact on the consumer's health. The results of sensory evaluation by panelist show no significant differences at 0.05 in sensory characteristics between processed cheese that supported by probiotic bacteria and unsupported processed cheese, Both kinds of processed cheese had got acceptance of consumers & panelist. The results of this study show that the processed spread cheese is a suitable medium to transfer probiotic bacteria to consumers without any changes in sensory characteristics and chemical composition.

Key words: Probiotic Bacteria *Lactobacillus acidophilus LA-5, Lactobacillus casei 431*

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Probiotics

food Probiotics

.(Sanders, 1999)

(for life)

(Fuller,1989)

/ 10^6

100

.(Salminen,1998)

lactic acid bacteria

:

Lactobacillus, *bifidobacterium*, *lactococcus*, *leuconostoc*,
streptococcus, *pediococcus*, *enterococcus*. (Holzapfel *et al.*,1998).

Lactobacillus,

bifidobacterium

(Jarvenpaa *et al.*, 2007)

Lactobacillus

pH

.(Charteris *et al.*, 1997) 6.2–5.5

:

L- rhamnosus, *L-plantarum*, *L-gasseri*, *L-acidophilus* *L- casei*,
L-para casei, *L- reuteri* (Makinen and Bigret,1993).

(antimicrobial)

.(Salminen, 2001)

functional cheese

pH

.(Stanton *et al.*,1998)

(Michael *et al.*, 2006)

bifidobacterium spp, L- rhamnosus, L- casei, L-paracasei
32 / 10⁶

L-acidophilus

(Gardiner *et al.*,1998)

L-paracasei

Lactobacillus

8

L-acidophilus bifidobacterium spp,
90

.(Yilmaztekin *et al.*, 2004)

L-acidophilus bifidobacterium bifidum

.(Sharareh and Memahon,1992)

17

.(Dinakar and Mistry,1994)

.1

Lactobacillus acidophilus LA -5 , Lactobacillus casei 431

Lactobacillus acidophilus LA -5 ,

.2

Lactobacillus casei 431

8

	100	20	.4
		.%1	.5
	100	2.5	.6
	60 – 40	° 39	.7
		15	.8
			.9
			.10
	.%16		.11
	:()		.3

12 .1-4 . 4-3
3

: .4

Lactobacillus acidophilus

LA -5 , Lactobacillus casei 431

° °90	%12	
%0.05	L-cysteine – HCL	° 37
	(Dave and hah,1997)	
	18 ° 37	(%0.5)
° 85	%2 ° 37	10
	18 ° 37	
	:	.5

Stephan

.(Caric,1993) : 25

				.1
)		.2
			(.3
	5	° 90		.4
		/	3000/1500	.5
			° 45	.6
			11	.7
			L-cysteine – HCl	.8
				.9
			:	.6
		:		.
%2	99	11	10- 1	
L-cysteine –			pepton wate	
			(Dinakar and Mistry,1994)%0.05 HCL	
			(Yousef and Carlstrom, 2003)	
			:	
<i>Lactobacillus acidophilus LA -5</i> ,				
			<i>Lactobacillus casei</i> 431	
Rogosa Sl			2,4,6,8	
			Agar	
			Vancomycine 1 MRS Agar	
Vancomycine 1			<i>Lactobacillus acidophilus LA -5</i>	
			<i>Lactobacillus casei</i>	

3

° 37

(Thamaraj and Shah, 2003)

(Charteris *et al.*,1997)

Baird

48 ° 37

(nutrient agar)
parker

(VRBA)

potato

24 ° 37

Yousef and Carlstrom)

5 ° 25

dextrose agar

(,2003

: .7

control

° 105

° 550

0.1

(AOAC, 2002)

pH

pH

(Kindstedt and Fox,1991)

pH 5/6 and Lon 5/6

Oakton

: .8

12

(5-0)

(10-0)

18

(3-0)

(Afnor,1993)

() 9

hedanic scale

()

(Larmond,1982)

60

: .9

(t)
.Spss

: .1

%0.66 12

: .2

(1)

(1)

%	
%37.2	
%9.3	
%9.3	
%18.6	
%3.25	
%2.3	
%0.93	
%0.23	
%0.23	
%18.6	

: .3

)

(/ 10^6)

(

.(Dinakar and Mistry,1994)

Lactobacillus acidophilus LA -5, *Lactobacillus* (2)
8 *casei* 431

(Nighswonger *et al.*, 1996)

Lactobacillus acidophilus LA -5, *Lactobacillus casei* 431 (2)

<i>Lactobacillus casei</i> 431 /	<i>Lactobacillus acidophilus</i> LA -5 /	
3×10 ⁷	2.8×10 ⁷	(0)
3.2×10 ⁷	2.9×10 ⁷	2
2.9×10 ⁷	2.6×10 ⁷	4
2.8×10 ⁷	1.9×10 ⁷	6
2.6×10 ⁷	1.4×10 ⁷	8

Lactobacillus casei

/ 2.6×10⁷ 431

Lactobacillus acidophilus LA -5

/ 1.4×10⁷

Lactobacillus casei 431 *Lactobacillus acidophilus* LA -5

acidophilus

Lactobacillus

(Michael *et al.*, 2006)

(/ 1×10²)

(/ 1.4×10³)

)
(Shah, 1999)

L-cysteine – HCL
(Gobbetti *et al.*, 1998)
(

: .4

(3)

(Control)

%38.63
404)

%38.9

.%53 .% 45 29
%52.7

(1986

.% 65 15

(3)

pH	%	%	%	%	%	%	
5.59±.007	1.11±.04	3.8±.04	1.76±.02	12.90±.20	52.70±.75	38.90±.30	
5.75±0.05	1.065±0.05	3.73±0.05	1.75±0.050	12.8±0.32	53 ±1.44	38.63±.25	
5.63±0.10	1.14 ±0.05	2.1±0.07	0.66 ±0.05	19.9±0.45	42.4 ±0.70	41.2±1.30	
5.5±0.10	1.16±0.06	3.2±0.20	1.8±0.12	25.1±0.4	47.1 ±1.01	57.1±0.97	
5.2±0.05	1.6±0.02	2.8±0.10	1.1±0.10	13.2±0.36	31.8±1.02	27.65±0.49	
5.51±0.01	1.1±0.01	2.4±0.10	0.16±0.10	2.5±0.1	89.9±1.65	53.6±0.63	
6±0.057	1.2±0.057	8.1±0.10	1.9±0.10	12.5±0.31	0.0135±0.001	96.3±0.32	

: .5

(4)

6.74

3.58

2.68

6.67

3.68

2.51

13.29

13.08

0.05

Lactobacillus acidophilus LA -5 , *Lactobacillus casei*

(4)

	t			
0.898	0.132	6.7±1.72	6.74±1.43	(10-0)
0.600	0.540	3.68±0.91	3.58±0.66	(5-0)
0.438	0.804	2.51±0.48	2.68±0.44	(3-0)
0.686	0.418	13.29±2.36	13.08±2.18	(18)

12

1.3

6.43

.1.09

6.6

P>0.05

Lactobacillus acidophilus

.1

LA -5 , *Lactobacillus casei* 431

.2

.3

8

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