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Microorganisms isolated from vacuum-packaged unpressurized (control) and pressurized (550 MPa at 25°C for 5 min) crab meat stored at refrigeration temperature for 31 days


Microorganisms	Days of storage and treatment													
	Control							550 MPa						
	0	3	7	12	17	24	31	0	3	7	12	17	24	31
<i>Acinetobacter johnsonii</i>	●													
<i>Acinetobacter lwoffii</i>	●													
<i>Aerococcus viridans</i>								●						
<i>Aeromonas salmonicida</i>							●							
<i>Arthrobacter aurescens agilis</i>	●		●											
<i>Bacillus megaterium</i>		●												
<i>Brevibacillus agri</i>	●							●						
<i>Brevibacterium iodinum</i>	●							●	●					
<i>Brevibacterium linens</i>								●						
<i>Brevibacterium casei</i>								●	●					
<i>Brevibacterium epidermidis</i>								●						

● = isolated from aerobic plates \* = isolated from anaerobic roll tubes

Microorganisms isolated from vacuum-packaged unpressurized (control) and pressurized (550 MPa at 25°C for 5 min) crab meat stored at refrigeration temperature for 31 days

Microorganisms	Days of storage and treatment													
	Control							550 MPa						
	0	3	7	12	17	24	31	0	3	7	12	17	24	31
<i>Carnobacterium piscicola</i>	*	● *	● *	● *	● *	● *	● *				*		● *	
<i>Chryseobacterium balustinum</i>			●											
<i>Corynebacterium auris</i>										●	●			
<i>Enterococcus mundtii</i>								*	● *	● *	●	● *	*	*
<i>avium</i>								*			*	*	*	● *
<i>solitarius</i>								*			*	● *	*	● *
<i>Exiguobacterium acetylicum</i>	●	●		●										
<i>Macrocooccus caseolyticus</i>		●						●	●	*				

● = isolated from aerobic plates \* = isolated from anaerobic roll tubes



**Microorganisms isolated from vacuum-packaged unpressurized (control) and pressurized (550 MPa at 25°C for 5 min) crab meat stored at refrigeration temperature for 31 days**

Microorganisms	Days of storage and treatment													
	Control							550 MPa						
	0	3	7	12	17	24	31	0	3	7	12	17	24	31
<i>Moraxella catarrhalis</i>											●			
<i>Providencia rustigianii</i>							●							
<i>Pseudomonas putida aureofaciens</i>		● ●	●	●		●								
<i>Psychrobacter immobilis</i>										●	●	●		
<i>Staphylococcus kloosii</i>	●													

● = isolated from aerobic plates    \* = isolated from anaerobic roll tubes



## Predominant microorganisms isolated from aerobic plates

Day	Control	550 MPa
0	<i>Exiguobacterium acetylicum</i> <i>Acinetobacter</i>	<i>Brevibacterium</i>
3	<i>Pseudomonas putida</i>	<i>Brevibacterium</i>
7	<i>Pseudomonas putida</i>	<i>Psychrobacter immobilis</i>
12	<i>Carnobacterium piscicola</i> <i>Pseudomonas putida</i>	<i>Psychrobacter immobilis</i>
17	<i>Carnobacterium piscicola</i>	<i>Enterococcus</i>
24	<i>Carnobacterium piscicola</i>	<i>Enterococcus</i>
31	<i>Carnobacterium piscicola</i>	<i>Enterococcus</i>



## Predominant microorganism isolated from anaerobic roll tubes

Day	Control	550 MPa
0	<i>Carnobacterium piscicola</i>	<i>Enterococcus</i>
3	<i>Carnobacterium piscicola</i>	<i>Enterococcus</i>
7	<i>Carnobacterium piscicola</i>	<i>Enterococcus</i>
12	<i>Carnobacterium piscicola</i>	<i>Enterococcus</i>
17	<i>Carnobacterium piscicola</i>	<i>Enterococcus</i>
24	<i>Carnobacterium piscicola</i>	<i>Enterococcus</i>
31	<i>Carnobacterium piscicola</i>	<i>Enterococcus</i>



**Sensory characteristics of unpressurized (control) and pressurized crab meat stored at 4°C for 31 days**

<b>Day</b>	<b>Control</b>	<b>300 MPa</b>	<b>550 MPa</b>
<b>0</b>	<b>Fresh</b>	<b>Fresh</b>	<b>Fresh</b>
<b>7</b>	<b>Pungent, strong odor</b>	<b>Fresh</b>	<b>Fresh</b>
<b>12</b>	<b>Pungent, strong odor</b>	<b>Fresh</b>	<b>Fresh</b>
<b>17</b>	<b>Pungent, strong odor, spoiled</b>	<b>Fresh</b>	<b>Fresh</b>
<b>24</b>	<b>Strong odor, spoiled</b>	<b>Stale</b>	<b>Fresh, acceptable</b>
<b>31</b>	<b>Strong odor, spoiled</b>	<b>Pungent, sweet flavor, cabbage flavor, smoky flavor, unacceptable</b>	<b>Little stale, acceptable</b>



**L\* (lightness) values of unpressurized (control) and pressurized (300 and 550 MPa, 25 °C for 5 min) crab meat stored at 4 °C for 31 days**

<b>Day</b>	<b>Control<sup>1</sup></b>	<b>300 MPa<sup>2</sup></b>	<b>550 MPa<sup>3</sup></b>
<b>0</b>	<b>80.0 ± 0.97<sup>a</sup></b>	<b>78.1 ± 0.75<sup>b</sup></b>	<b>79.2 ± 0.86<sup>a</sup></b>
<b>12</b>	<b>78.6 ± 0.77<sup>a</sup></b>	<b>78.4 ± 0.68<sup>ab</sup></b>	<b>77.6 ± 1.43<sup>b</sup></b>
<b>31</b>	<b>79.0 ± 1.26<sup>a</sup></b>	<b>78.2 ± 1.50<sup>a</sup></b>	<b>78.4 ± 1.15<sup>a</sup></b>

**1,2,3 Each value under the same treatment represents a mean of 10 measurements with standard deviations.**

**a,b Means in same row with same letter are not significantly different (P>0.05).**




**a\* (redness) values of unpressurized (control) and pressurized (300 and 550 MPa, 25 °C for 5 min) crab meat stored at 4 °C for 31 days**

<b>Day</b>	<b>Control<sup>1</sup></b>	<b>300 MPa<sup>2</sup></b>	<b>550 MPa<sup>3</sup></b>
<b>0</b>	<b>-2.1 ± 0.17<sup>a</sup></b>	<b>-1.9 ± 0.26<sup>a</sup></b>	<b>-2.4 ± 0.23<sup>b</sup></b>
<b>12</b>	<b>-1.0 ± 0.25<sup>a</sup></b>	<b>-2.3 ± 0.41<sup>c</sup></b>	<b>-1.8 ± 0.28<sup>b</sup></b>
<b>31</b>	<b>-1.1 ± 0.32<sup>a</sup></b>	<b>-1.9 ± 0.32<sup>b</sup></b>	<b>-1.9 ± 0.29<sup>b</sup></b>

**1,2,3 Each value under the same treatment represents a mean of 10 measurements with standard deviations.**

**a,b,c Means in same row with same letter are not significantly different (P>0.05).**



**b\* (yellowness) values of unpressurized (control) and pressurized (300 and 550 MPa, 25 °C for 5 min) crab meat stored at 4 °C for 31 days**

<b>Day</b>	<b>Control<sup>1</sup></b>	<b>300 MPa<sup>2</sup></b>	<b>550 MPa<sup>3</sup></b>
<b>0</b>	<b>8.6 ± 0.83<sup>b</sup></b>	<b>9.9 ± 0.89<sup>a</sup></b>	<b>8.3 ± 0.77<sup>b</sup></b>
<b>12</b>	<b>7.6 ± 0.84<sup>b</sup></b>	<b>8.2 ± 0.83<sup>b</sup></b>	<b>9.1 ± 0.88<sup>a</sup></b>
<b>31</b>	<b>7.3 ± 0.89<sup>a</sup></b>	<b>7.0 ± 1.18<sup>a</sup></b>	<b>7.6 ± 0.80<sup>a</sup></b>

**1,2,3 Each value under the same treatment represents a mean of 10 measurements with standard deviations.**

**a,b Means in same row with same letter are not significantly different (P>0.05).**



**Compressive load at break, compressive load at maximum compression load, and energy at break of unpressurized (control) and pressurized (300 and 550 MPa, 25° C for 5 min) crab meat**

	<b>Control<sup>1</sup></b>	<b>300 MPa<sup>2</sup></b>	<b>550 MPa<sup>3</sup></b>
<b>Compressive load at break (N/g)</b>	<b>8.1 ± 1.08<sup>a</sup></b>	<b>8.6 ± 1.83<sup>a</sup></b>	<b>8.7 ± 1.57<sup>a</sup></b>
<b>Compressive load at maximum compression load (N/g)</b>	<b>19.7 ± 1.61<sup>a</sup></b>	<b>18.9 ± 1.21<sup>a</sup></b>	<b>18.7 ± 0.26<sup>a</sup></b>
<b>Energy at break (J/g)</b>	<b>0.2 ± 0.02<sup>a</sup></b>	<b>0.2 ± 0.02<sup>a</sup></b>	<b>0.2 ± 0.01<sup>a</sup></b>

**1,2,3 Each value under the same treatment represents a mean of 10 measurements with standard deviations.**

**a, Means in same row with same letter are not significantly different (P>0.05).**



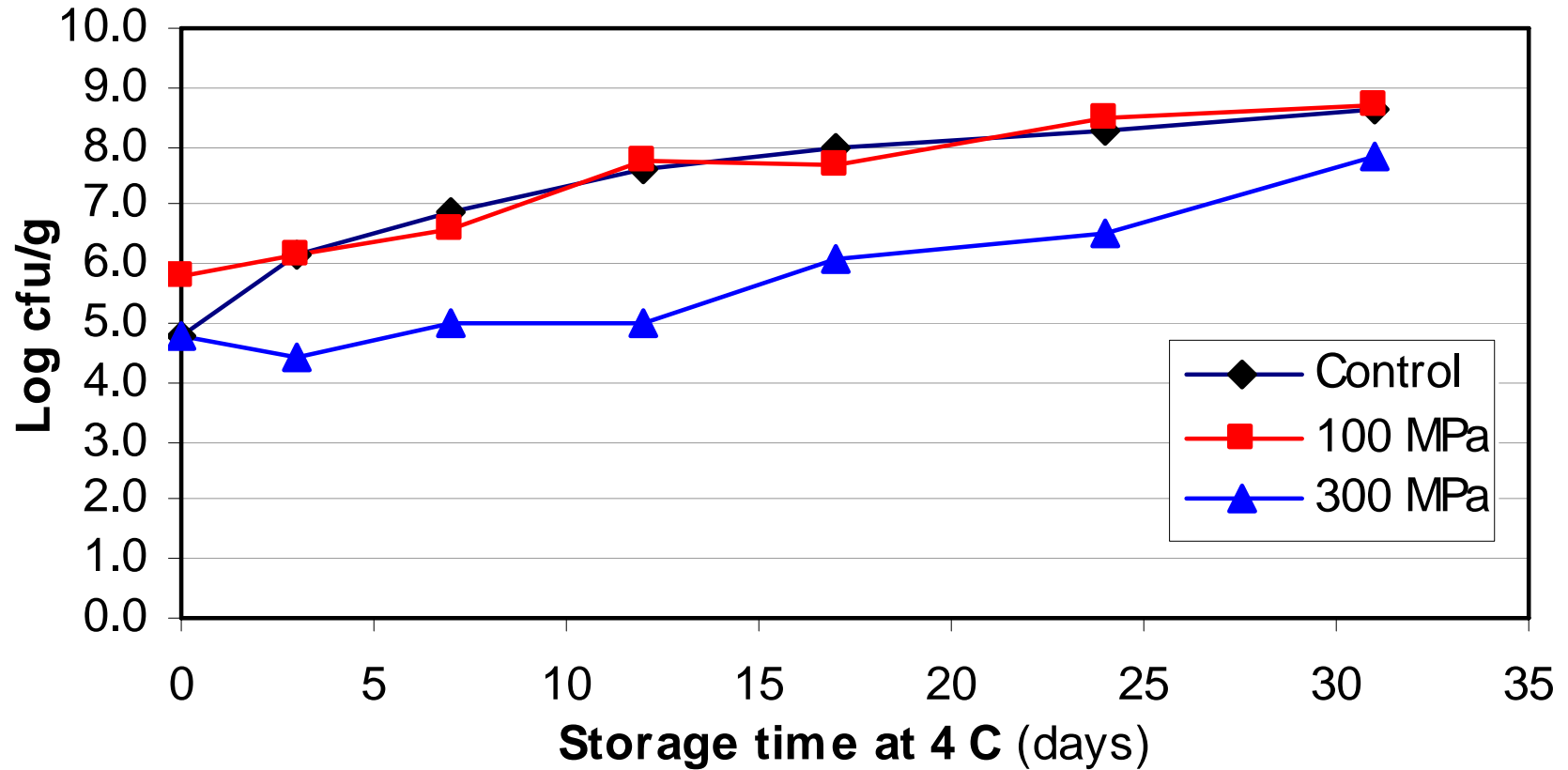
**pH changes of unpressurized and pressurized crab meat (300 and 550 MPa for 5 min at 25 °C) stored at 4 °C for 31 days**

<b>Day</b>	<b>Control<sup>1</sup></b>	<b>300 MPa<sup>2</sup></b>	<b>550 MPa<sup>3</sup></b>
<b>0</b>	<b>7.7 ± 0.01<sup>a</sup></b>	<b>7.7 ± 0.02<sup>a</sup></b>	<b>7.7 ± 0.02<sup>a</sup></b>
<b>17</b>	<b>7.3 ± 0.04<sup>b</sup></b>	<b>7.4 ± 0.11<sup>ab</sup></b>	<b>7.5 ± 0.06<sup>a</sup></b>
<b>31</b>	<b>7.2 ± 0.10<sup>c</sup></b>	<b>7.8 ± 0.08<sup>a</sup></b>	<b>7.4 ± 0.02<sup>b</sup></b>

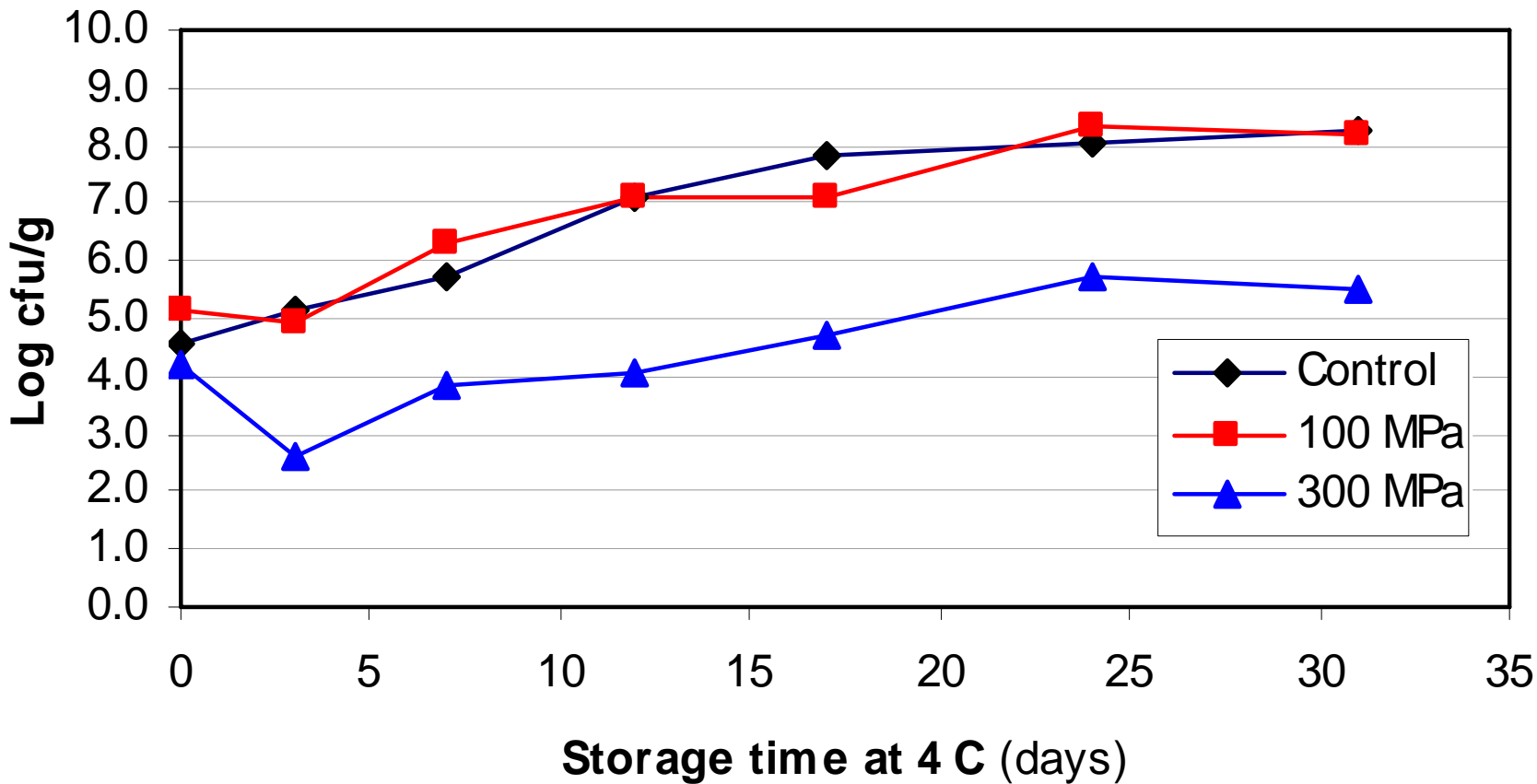
**1,2,3 Each value under the same treatment represents a mean of 4 measurements with standard deviations.**

**a,b,c Means in same row with same letter are not significant different (P>0.05).**

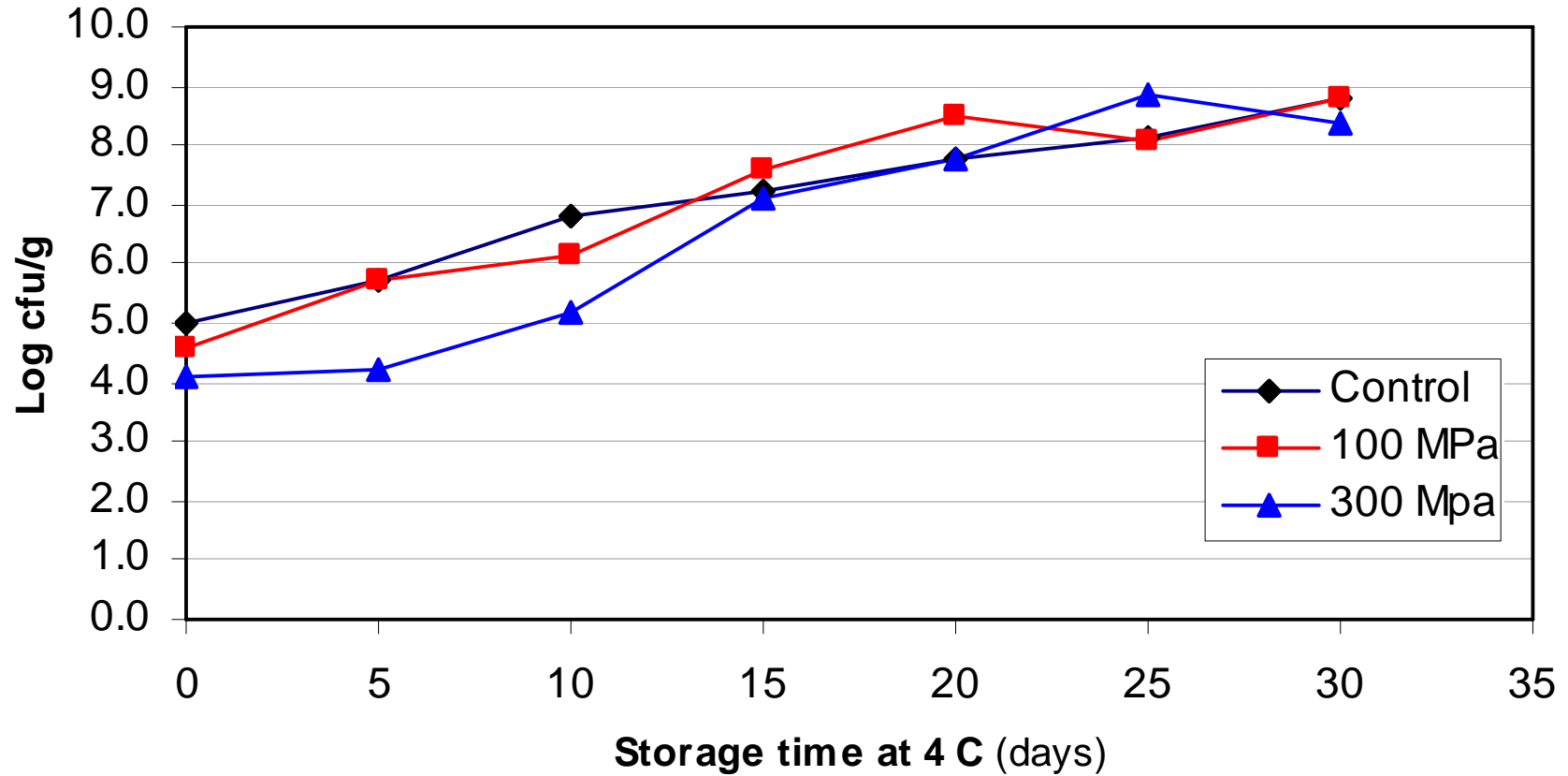
**Effect of pressure levels of 100 and 300 MPa for 15 min at the starting temperature of 25 °C on total aerobic plate counts of crab meat stored at 4 °C for 31 days**



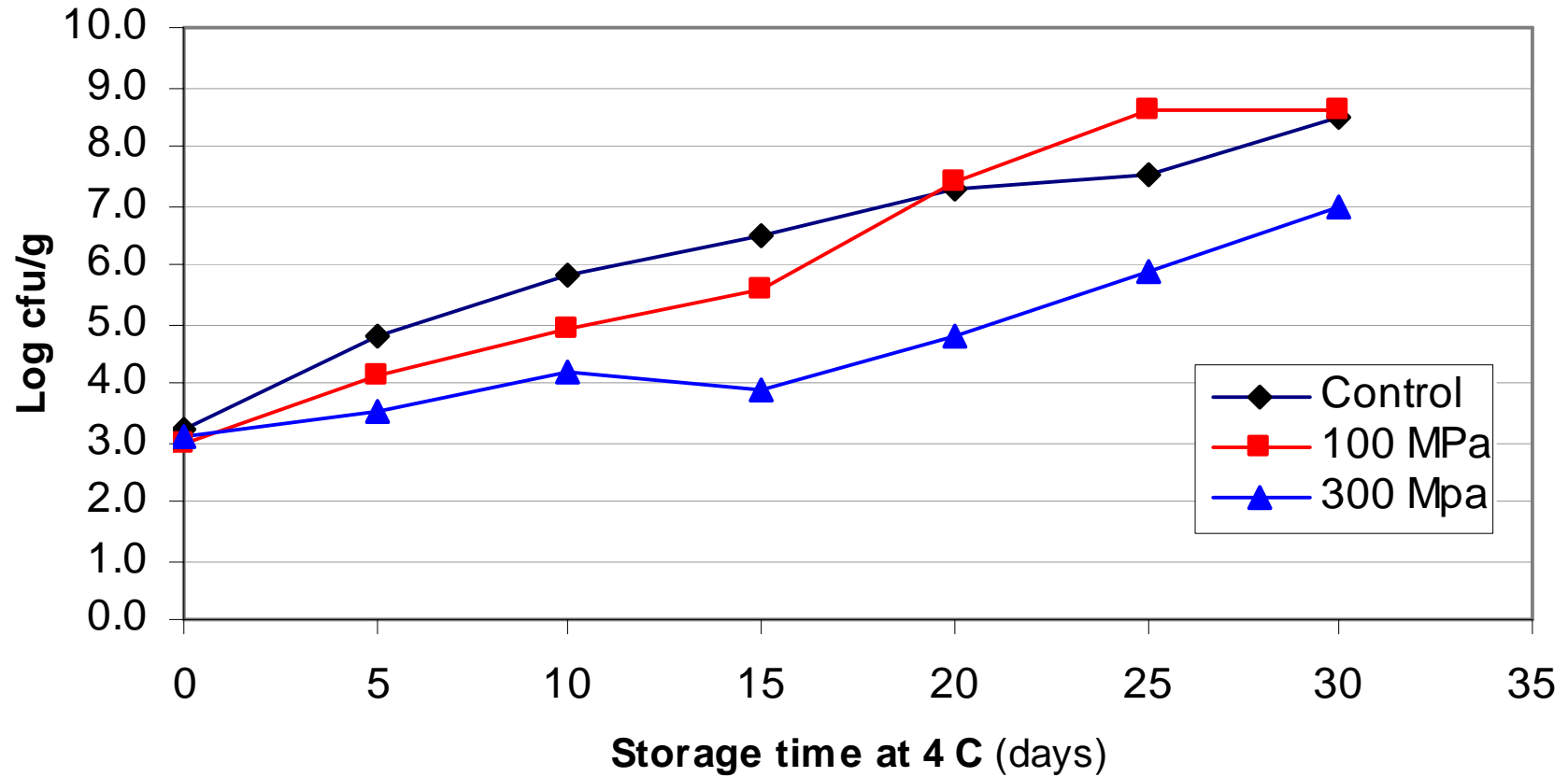
**Effect of pressure levels of 100 and 300 MPa for 15 min at the starting temperature of 25 °C on anaerobic plate counts of crab meat stored at 4 °C for 31 days**



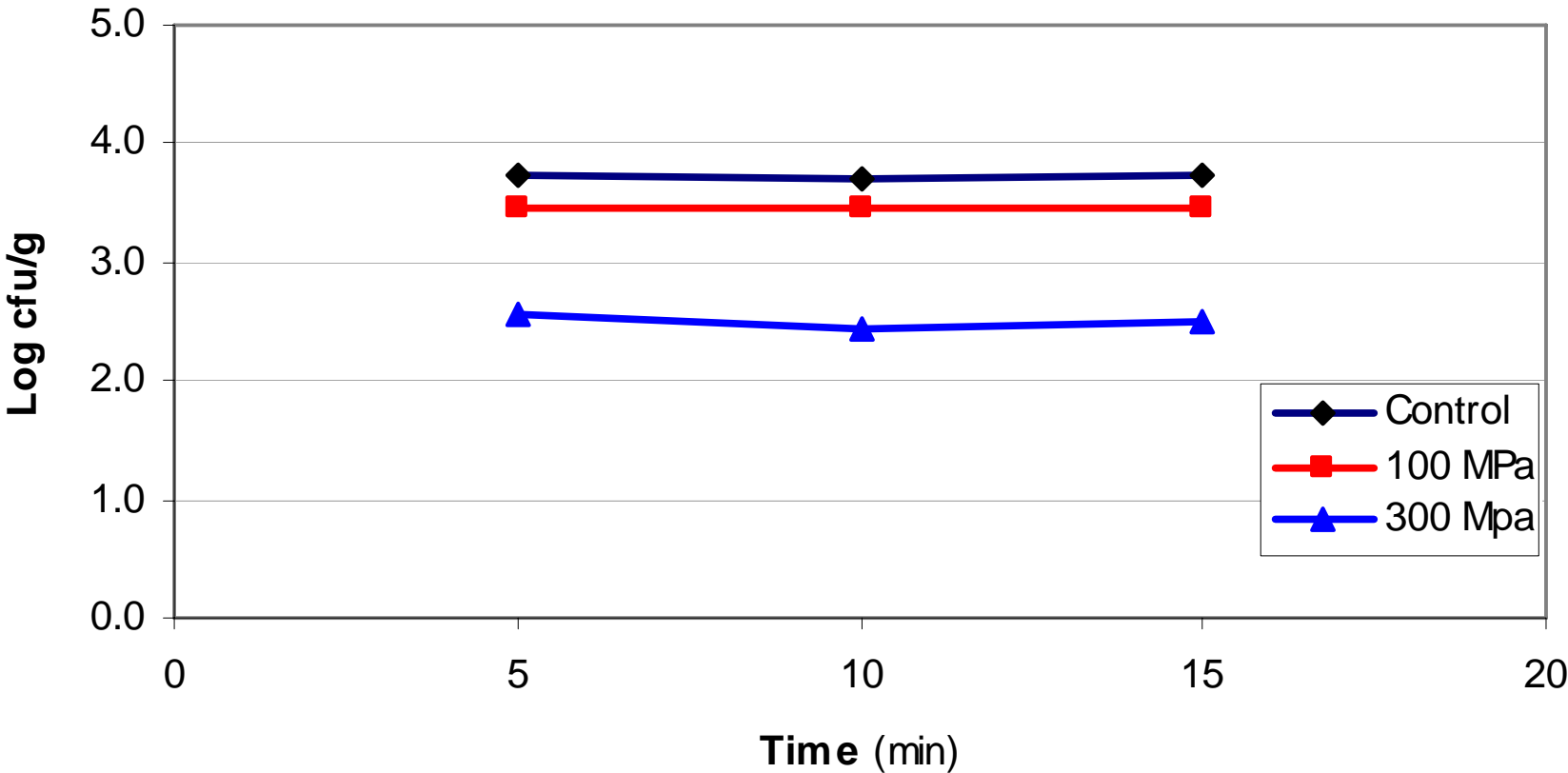
**Effect of pressure levels of 100 and 300 MPa for 15 min at the starting temperature of 50 °C on total aerobic plate counts of crab meat stored at 4 °C for 31 days**



**Effect of pressure levels of 100 and 300 MPa for 15 min at the starting temperature of 50 °C on anaerobic plate counts of crab meat stored at 4 °C for 31 days**



Effects of processing times of 5, 10, and 15 min at 25 °C at 300 and 550 MPa on total aerobic plate counts



**Effects of processing times of 5, 10, and 15 min at 40°C at 300 and 550 MPa on total aerobic plate counts**

