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The objective of the present research was to study the effect of various heat treatments in combination with homogenization on the technological potential of goat milk focusing on:

- the extend of heat-denaturation of whey proteins
- rennet clotting behaviour
- endogenous enzymes / indices of heat load
- biological acidification / yoghurt-type gels



RESULTS

Table 1. pH and acidity (% lactic acid) of heat treated goat milks; means of 3 experiments ± standard deviation. Different letters indicate statistically significant differences between treatments (P<0.05).

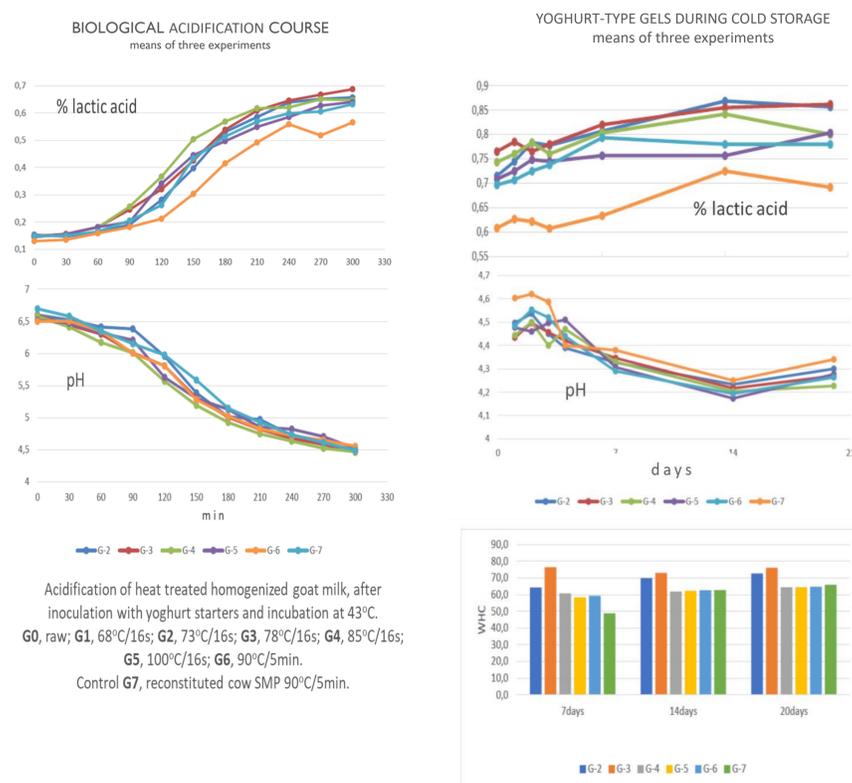
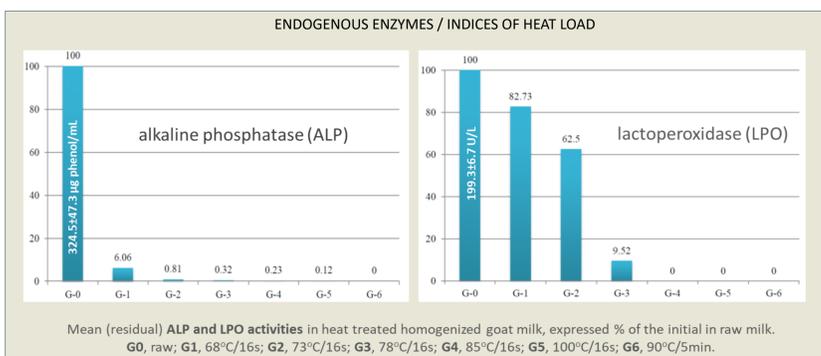
Treatment	pH	Acidity
G0, raw	6,65±0,105 b	0,15±0,005 a
G1, 68°C/16s	6,55±0,025 a,b	0,15±0,010 a
G2, 73°C/16s	6,56±0,065 a,b	0,14±0,006 a
G3, 78°C/16s	6,52±0,106 a,b	0,15±0,006 a
G4, 85°C/16s	6,52±0,064 a	0,15±0,006 a
G5, 100°C/16s	6,46±0,086 a	0,14±0,015 a
G6, 90°C/5min	6,43±0,105 a	0,14±0,007 a

Table 2. Percentage changes of native whey proteins of heat treated goat milks compared to the respective raw milks; means of 3 experiments. SN/TN, pH 4.6 soluble N/total N by means of Kjeldahl method; α-la, α-lactalbumin and β-Ig, β-lactoglobulin estimated by RP-HPLC.

Treatment	SN/TN	α-la	β-Ig
G1, 68°C/16s	-7,9	2,6	-0,7
G2, 73°C/16s	-13,3	1,3	-4,6
G3, 78°C/16s	-20,4	5,8	-7,6
G4, 85°C/16s	-35,8	-9,1	-54,9
G5, 100°C/16s	-42,9	-11,0	-91,8
G6, 90°C/5min	-63,8	-94,7	-99,6

Table 3. Rennet clotting behaviour of heat treated goat milks; means of 3 experiments ± standard deviation. Different letters indicate statistically significant differences between treatments (P<0.05). RCT, rennet clotting time; A30 curd consistency.

Treatment	RCT (min)	A30 (min)
G0, raw	12,3±0,21 a	34,2±3,44 d
G1, 68°C/16s	14,2±0,87 b	30,5±2,75 c,d
G2, 73°C/16s	15,0±0,79 b,c	26,7±0,48 b,c
G3, 78°C/16s	16,0±0,96 c,d	21,1±2,99 a,b
G4, 85°C/16s	15,5±1,00 b,c	22,5±3,71 a,b
G5, 100°C/16s	17,4±1,05 d	17,3±3,21 a
G6, 90°C/5min	15,0±0,51 b,c	23,7±8,28 b,c



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