Supplementary file: Predictive modelling -Raw milk cooling and bacterial growth

Table 1. Literature data on growth rates of psychrotrophic bacteria in raw milk

Temperature °C	^{x}µmax (^{10} log scale)/hour	Conditions	Reference
4	0.03; 0.04; 0,03	Natural flora	(Stadhouders, 1968)
4	0.02, 0.03	Single strains	(Stadhouders, 1968)
4.4	0.02	Natural flora	(Senyk *et al.*, 1988)
4	0.05	Natural flora	(Cox & Mac Rea, 1988)
4	0.04	Psychrotrophic flora following cold enrichment	(Maxcy & Liewen, 1989)
4	0.04	*Ps. fluorescens* added to raw goats milk	(Zapico *et al.*, 1995)
4	0.03	Natural flora	(Ravanis & Lewis, 1995)
4	0.01; 0.02; 0.03; 0,03; 0.01; 0,04	Six strains of *Ps. fluorescens* in raw milk	(Cox & Mac Rea, 1988)
4	0.04; 0:05	Two strains of *Ps. fragi* in raw goats milk	(Cox & Mac Rea, 1988)
5	0.03	Natural flora	(Björck, 1978)
8	0.10	Natural flora	(Muir *et al.*, 1978)
8	0.08	Psychrotrophic flora following cold enrichment	(Zapico *et al.*, 1995)
8	0.06	*Ps fluorescens* added to raw goats milk	(Maxcy & Liewen, 1989)

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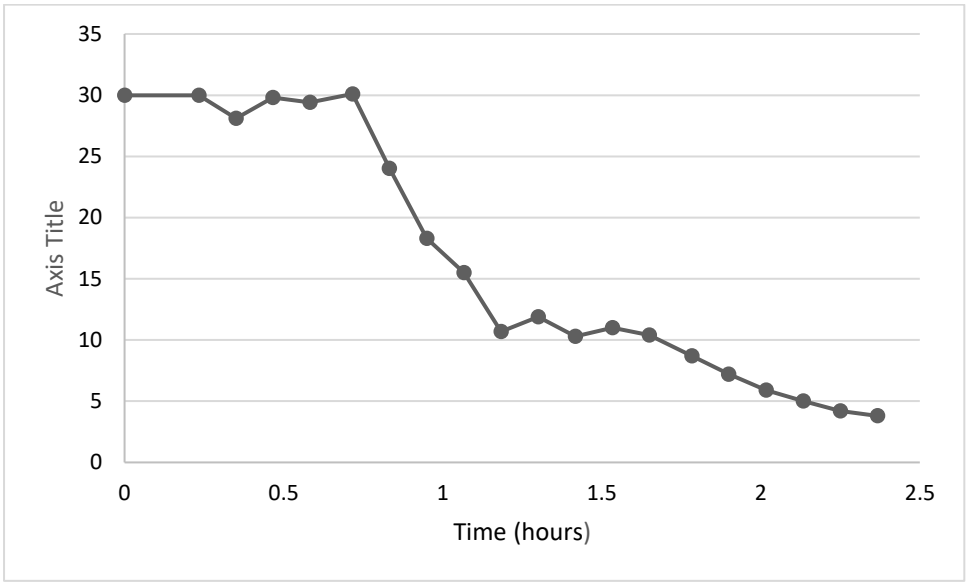
Supplementary file: Table 2. Effect of the cooling rate on bacterial counts at 48 hours

Cooling rate (°C/ hours)	Time to 4 °C (hours)	Lag phase (hours)	cfu/ml[#]
20	2.3	28.8	310
10	3.6	24.5	440
5	6.2	15.5	1100
2.5	11.3	5.7	7700

[#] Initial counts 100 cfu/ml

Supplementary Figure 1.

A. Example of a cooling curve recorded at a farm with conventional milking



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B. Simplified cooling curve used for exploration of growth as affected by three phases: 1 hour at 30°C, 1 hour from 30 to 10°C and two hours from 10 to 4°C (c.f. Table 1)