

EFFECTS OF TRANSITION FROM TWICE- TO ONCE-A-DAY MILKING ON MILK FLOW KINETICS OF ALPINE GOATS

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Milking is the most important part of the work on a dairy farm. It can be limited by accessing to once-a-day milking, at least at the end of the milking period with a potentially better recover of udder health. This study focalizes on the effects of this transition on milk flow kinetics, taking animal characteristics into account.

MATERIAL AND METHODS

- 4 groups of 3 goats (cf. Tab. 1), Méjusseume (Brittany) experimental herd (INRA), equilibrated in lactation and parity stages, but contrasted for milk flows (F) and udder inflammatory levels (C):
F-C- (lower flow, few cells), F-C+ (lower flow, many cells),
F+C- (high flow, few cells) and F+C+ (high flow, many cells),
- 2x12 backside milking parlour, with ACR (Automatic Cluster Removal), Milking vacuum: 38.6 kPa, Pulsation: simultaneous, 120 cycles/min., ratio 60/40, Same circulation batch and milking routine,
- Flow kinetics recorded by 4 (1 for 3 goats) LactoCorder® (WMB) (cf. Pict. 1), 3 days before and 6 after the change of milking rythm, (19 to 27th of July 2014, at least after 5 months of lactation),
- LactoPro® 6.0.32 (WMB) data processing ,
- Excel® 2013 (Microsoft) treatment of synthetic indicators.

Groups	Milk flows (F)	Udder inflammatory levels (C)
	kg/min.	x 1,000 cells/ml
F-C-	0.5 - 0.95	89 - 664
F-C+		1,238 - 6,443
F+C-	1.41 - 2.11	210 - 762
F+C+		1,753 - 2,315

Tab. 1 : Groups constitution and description



Pict. 1 : LactoCorder® on Long Milk Tube

RESULTS

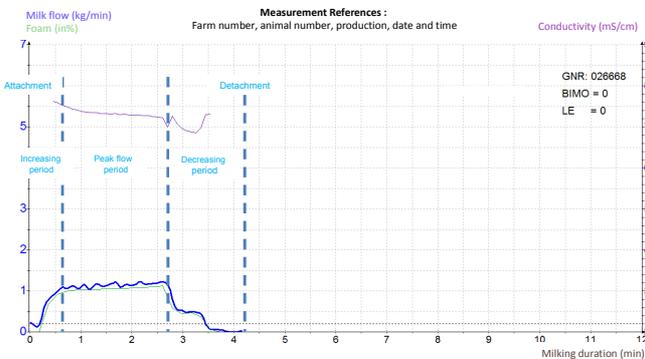


Fig. 1 : Explained typical LactoPro® goat kinetics

Synthetic indicators	Variations
Daily milk quantities reduced	- 0.42 to 0.82 kg/goat
Ligth increase of average milk flows	+ 0.03 to 0.18 kg/min.
Opposed variation of peak flows	- 0.22 to 0.67
Average increasing periods shortened	- 5
Average peak flow periods increased	+ 9 %
Average decreasing periods shortened	- 4
Always longer maximum milk flow periods	+0.32 to 0.72
Decrease period duration growth	+ 0.13 to 0.24 min.
Daily milking duration largely reduced	- 3.08 to 5.87

Tab. 2 : Evolutions of flow kinetics (12 goats) with the daily milking rythm change

Groups	Significant responses (student test, P>0,05)	
	Synthetic indicators	Average evolutions
F-C-	Daily milking duration	-5.87 min.
F-C+	/	
F+C-	Milk quantity loss	-0.85 kg/day
	Peak flow level	-0.22 kg/min.
F+C+	Flow decreasing phase duration	+0.24 min
	Average flow	+0.18 kg/min
F+C+	Peak flow level	+0.67 kg/min
	Daily milking duration	-3.08 min

Tab. 3 : Groups responses to the change in daily milking rythm

CONCLUSION AND PROSPECT

Small but notable differences in animal response (cf. tab. 3) to take into account for adaptation of manual take-off practices or ACR settings. Impacts on udder health after long term have to be investigated deeper.

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