The pulsator

The duration of the oxytocin release is limited. If milking takes too long the lack of oxytocin will result in no more milk being released by the alveoli. The milk can then no longer be extracted. The blue curve may be called a "square" flow pattern. That is how it is indicated. The red curve is more trapeze shaped. Tests have shown that a trapeze shaped flow pattern may have a SCC that is 1,5 times higher than in a square pattern.

Take off milking cluster

The timely removal of the cluster ensures that the final phase is shorter. This also contributes to a flow profile which is squarer. Nowadays the maximum automatic milk flow rate is often 300 grams per minute. Earlier - when cows produced less milk - the maximum was 200 grams per minute. The limit may be even higher than 300 grams, but only when it is absolutely certain that the cow will be milked out sufficiently.
In short, proper pretreatment and a timely removal of the cluster have their effect on the milk flow pattern. The squarer the pattern the more positive the effect on udder health.

The pulsationcurve

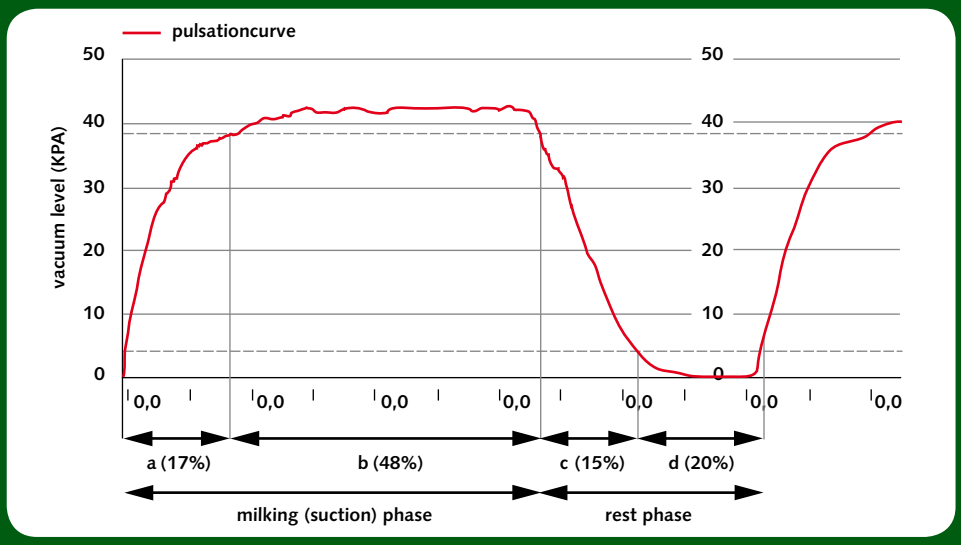

Fig. 5: pulsationcurve

The movements of the liner are a result of the alternating vacuum and atmospheric pressure in the pulsation chamber. Figure 5 is a good example of a desired pulsation pattern (pressure gradient in the pulsation chamber). The suction stroke consists of a + b; the rest stroke consists of c + d. The ratio suction-rest is here 65:35.
A pulsation cycle in the above diagram takes a little longer than one second. The number of pulses per minute is 58. The milk flows from the teat during the latter part of the a-phase, the b-phase and the first part of the c-phase. To milk a productive milking herd smoothly, the flow time should be 50 to 70% of the cycle time.
The pulsation pattern determines the ease of milking. Note: Too long a phase b puts excessive strain on the teats. The d-phase should neither be too short nor too long. If it is too short then the time of "massage" of the teats is too short. There is insufficient time for the teat to recover (the blood circulation). If the d-phase is too long or too strong. It may cause flat teats and this may lead to rough callosity rings caused by too much pressure on the teat ends. In this case the risk of mastitis increases.

Rough callosity rings

Normal teats