

Stepwise carcass chilling

The best choice between two traditional chilling processes

DMRI has unparalleled experience and expertise in developing and introducing state-of-the-art technologies to the meat industry. When introducing a new carcass chilling process, it is essential to focus on factors such as meat quality, weight loss, hygiene, automation level and sustainable production.

The new carcass chilling trend?

Combining a high level of hygiene with a low chilling loss, stepwise chilling of pig carcasses is a new chilling process that results in superior meat quality.

Meat Quality Effects

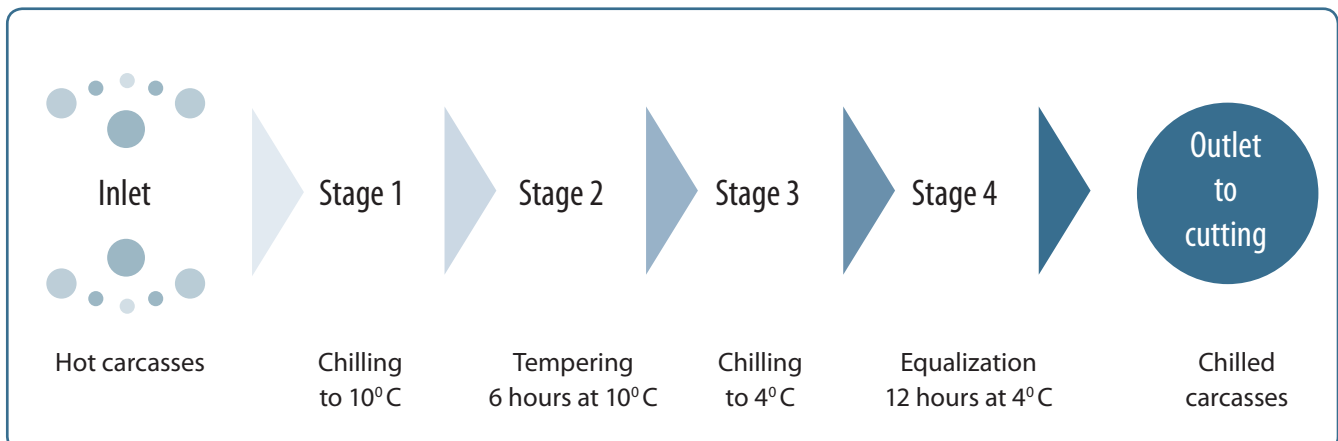
	Stepwise chilling	QCT	Sign.
Weight Loss (%)	1.7	1.1	**
Final pH	5.57	5.57	NS
Drip Loss (%) ^b	3.0	4.1	NS
Tenderness ^a	9.5	6.9	***
Juiciness ^a	10.3	9.8	**
Colour L-level	55.5	54.4	NS

^a sensory scale from 1 to 15, where 15 is excellent tender/juicy
NS: non-significant; ** p < 0.01; *** p < 0.001

^b Technical values found by EZ-method. Not directly convertible to yield gain or meat juice amounts.



The stepwise chilling process for carcasses consists of 4 stages

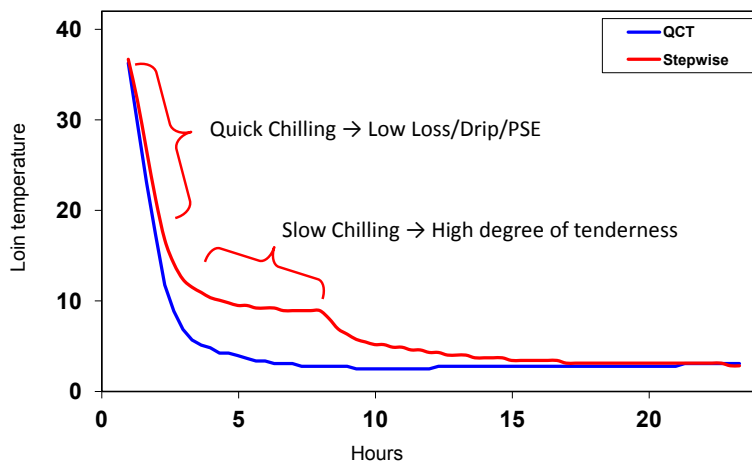


Benefits

The new process offers several advantages. The risk of cold shortening is eliminated, the ageing effect is accelerated, and the period without discolouration of the bones, which is normally seen with the traditional quick chill tunnel process, is further delayed. And not only that, the drip loss from the meat is lower and the process has no effect on the meat colour.

DMRI has designed the process and successfully tested and approved the design in full-scale tests.

The tests verified that stepwise chilling accelerates the ageing process by 2-3 days.



Loin muscle	Stepwise chilling	QCT + Equalization
Tenderness ^a		
- 2 days PM	8.0	6.9
- 4 days PM	9.0	7.9
- 7 days PM		9.3

^a Sensory scale from 1 to 15, where 15 is 'very tender'

Effect of ageing: Stepwise chilling versus QCT + Equalization



If you would like to hear more about implementation of a stepwise carcass chilling process at your company, DMRI will be pleased to offer our assistance.

For further information, please contact:

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DMRI is the international leading research and innovation centre within food of animal origin. DMRI assists our customers in increasing their competitiveness.

Our experts develop solutions for the meat industry and provide domestic and international consultancy and training within process design, productivity improvement, product quality and food hygiene to abattoirs and processing companies.



DMRI - your short cut to best practice