

HANSONTECH

Bob Hanson

809 Third Street

Hudson, WI 54016 USA

ph: 913-709-7566

bob.hanson@hansontech.net

University of Wisconsin Validated Beef Jerky Processes

From: Buege, D.R., Gina Searls, and S.C. Ingham. 2006. J of Food Protection 69(9):2091

Product: Whole muscle beef jerky, 0.25" (6.3mm) thick, marinated
Target kill: *Salmonella* kill > 5.0 log reduction (USDA)

Process A – Validated UW Process at 150°F (Type 1-B) — Whole muscle beef jerky

Step	Time	DryBulb	WetBulb	IT	Cumulative <i>Salmonella</i> kill	Cumulative <i>E. coli</i> O157:H7 kill
1	15 m	145°F	---			
2	15 m	150	---			
3	60 m	150	130°F	132°F	4.9	3.2
4	> 90 m to $a_w < 0.85$	150	---	136°F	6.7	7.1

Process B. Validated UW Process at 170°F (Type 1-A) — Whole muscle beef jerky

Step	Time	DryBulb	WetBulb	IT	Cumulative <i>Salmonella</i> kill	Cumulative <i>E. coli</i> O157:H7 kill
1	15 m	145°F	---			
2	15 m	170	---			
3	30 m	170	135°F	137°F	6.4	2.7
4	> 90 m to $a_w < 0.86$	170	---	147°F	7.0	7.1

Process C. Validated UW Process at 190°F (Type 1-B) — Whole muscle beef jerky

Step	Time	DryBulb	WetBulb	IT	Cumulative <i>Salmonella</i> kill	Cumulative <i>E. coli</i> O157:H7 kill
1	15 m	145°F	---			
2	15 m	190	---			
3	60 m	190	130°F	137°F	6.7	7.3
4	> 90 m to $a_w < 0.86$	190	---	147°F	7.0	7.4

Process A - modified — Validated UW Process at 150°F — Whole muscle beef jerky

<i>Step</i>	<i>Time</i>	<i>DryBulb</i>	<i>WetBulb</i>
1	15 m	145°F	---
2	15 m	150	---
3	60 m	150	135°F
4	90 m	150	---
5	to target $a_w < 0.85$	165	---