

# PROCESS LETHALITY DETERMINATION

Date: 10/14/2003 12:05 PM

Product name: 5/16 x 1/4 Red Bell Peppers - Chart Temp 195.7F, Product Temp 154F (Increased SHS Speed from 76 to 80 Hz)

z = 10 °F T ref = 145 °F

## Data Table

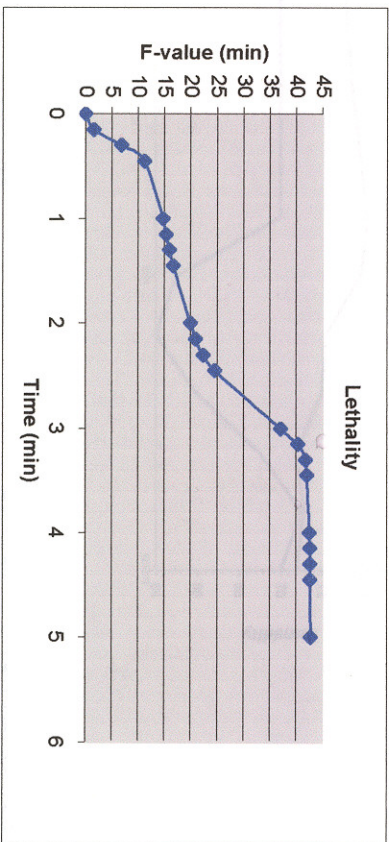
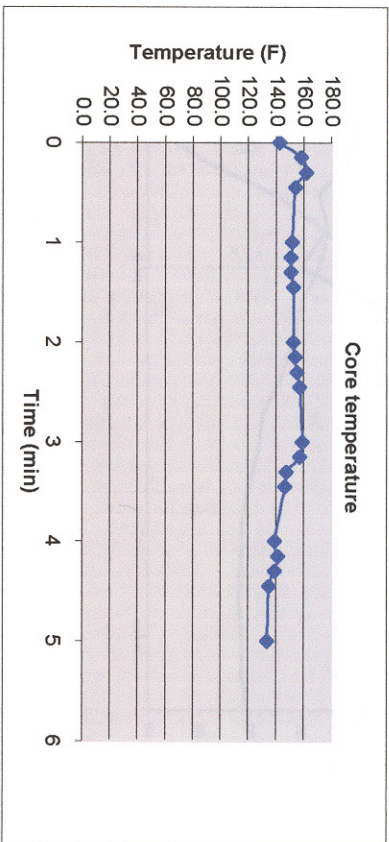
Time (min)	Core Temp (°F)	F-value (min)
0	142.7	0
0.15	158.2	1.61
0.3	161.9	6.85
0.45	154.1	11.13
1	151.9	14.72
1.15	150.8	15.37
1.3	150.9	15.95
1.45	152.5	16.66
2	152.9	19.90
2.15	154.1	20.97
2.3	155.5	22.42
2.45	157.5	24.60
3	159.4	37.06
3.15	157.4	40.43
3.3	147.8	41.87
3.45	146.6	42.13
4	139.3	42.60
4.15	141.5	42.65
4.3	139.2	42.70
4.45	134.9	42.73
5	133.5	42.78

## Definitions:

**D-value:** The time (in minutes) at an associated T ref required to kill 90% of the selected microorganism; a one log reduction.

**z-value:** The number of degrees F to change the D-value by a factor of ten.

**F-value:** The process lethality. The equivalent time of heating at a reference temperature.



## Microbial Heat Tolerance

Organism	T ref (°F)	z (°F)	D (min)	Log Reduction	Required F-Value
Salmonella	145	10	0.7	7	4.9
<i>E. coli</i> O157:H7	145	10	0.7	7	4.9
<b><i>Listeria monocytogenes</i></b>	<b>145</b>	<b>10</b>	<b>1.2</b>	<b>4</b>	<b>4.8</b>
<i>Lactobacillus plantarum</i>	145	10	11.1	4	44.4
Group D Streptococcus	158	18	3.0	4	12

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Process Validated:

Rick Falkenberg, Ph.D.