

$\mu_{\text{Milk}} = -0.5400$; $\sigma = 0.0080$;

$n=5$; $\text{SEM} = \sigma/\sqrt{n} = 0.0036$

$\alpha=0.05$, 1 sided alternative

$\text{qnorm}(0.95) : 1.645$

$1.645 * \text{SEM} = 0.0059$

$\text{cutoff} = \mu_{\text{Milk}} + 1.645 * \text{SEM}$.

$\text{cutoff} = -0.5400 + 0.0059 = -0.5341$

Probability (%)
of exceeding cutoff

-0.55

-0.54

-0.53

-0.52

-0.51

Freezing point (degrees C)

0 %

1 %

2 %

3 %

Added Water

MILK

95

5

100

99

98

96

92

84

73

60

45

30

19

10