

---

# *E. coli* and *Salmonella* Monitoring Report

---

Sample Report  
COW/BULL

Reporting Period:  
01 Jun 2006 to 31 May 2009

Generated  
July 10, 2009 at 20:25

Prepared by  
SARDI Food Safety Research  
33 Flemington Street  
GLENSIDE, SA 5065, Australia  
Ph: +61 8 8207 7945  
Fax: +61 8 8207 7854



**Government of South Australia**  
Primary Industries and Resources SA



# 1 Total Viable Count Summary

Table 1: Total Viable Count prevalence summary for this establishment and nationally.

	Plant	National
Tests	452	11972
Positives	452	9536
Percent +ve	100.00	79.65
Lower Bound	99.19	78.92
Upper Bound	100.00	80.37

Table 2: Total Viable Count summary for this establishment and nationally.

	Plant	National
Positives	452	9536
Minimum	-0.721	-1.523
Q1	0.301	0.684
Median	0.699	1.000
Mean (+ve)	0.870	1.086
Q3	1.230	1.519
90th Percentile	1.739	2.000
95th Percentile	2.340	2.362
99th Percentile	4.482	3.107
Maximum	7.322	7.322
SD	0.914	0.758

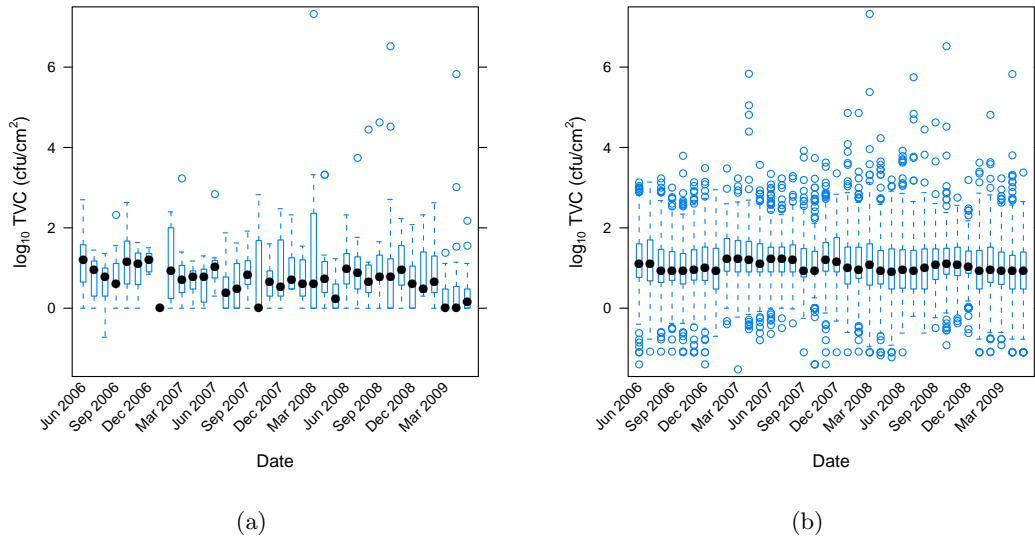


Figure 1: Box plot of monthly Total Viable Counts for (a) Establishment and (b) all establishments.

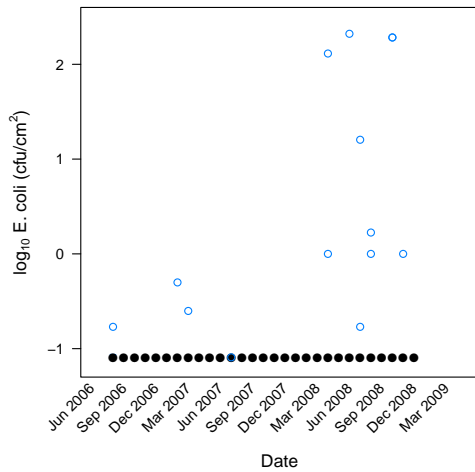
## 2 *E. coli* Summary

Table 3: *E. coli* prevalence summary for this establishment and nationally.

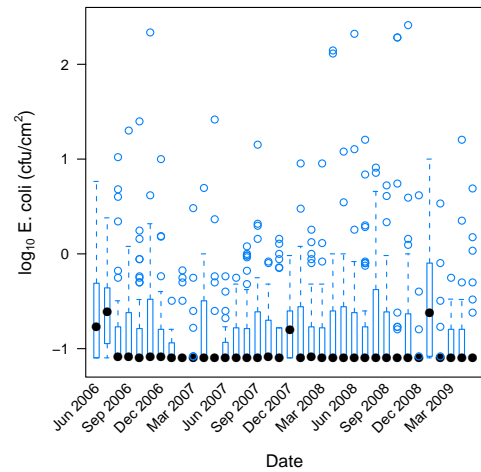
	Plant	National
Tests	456	16142
Positives	316	1135
Percent +ve	69.30	7.03
Lower Bound	64.84	6.64
Upper Bound	73.50	7.44

Table 4: *E. coli* summary for this establishment and nationally.

	Plant	National
Positives	316	1135
Minimum	-1.097	-1.097
Q1	-1.097	-1.097
Median	-1.097	-1.097
Mean (+ve)	-1.026	-0.799
Q3	-1.097	-0.620
90th Percentile	-1.097	-0.097
95th Percentile	-1.096	0.246
99th Percentile	1.977	1.186
Maximum	2.322	2.413
SD	0.418	0.525



(a)



(b)

Figure 2: Box plot of monthly *E. coli* positive concentrations for (a) Establishment and (b) all establishments.

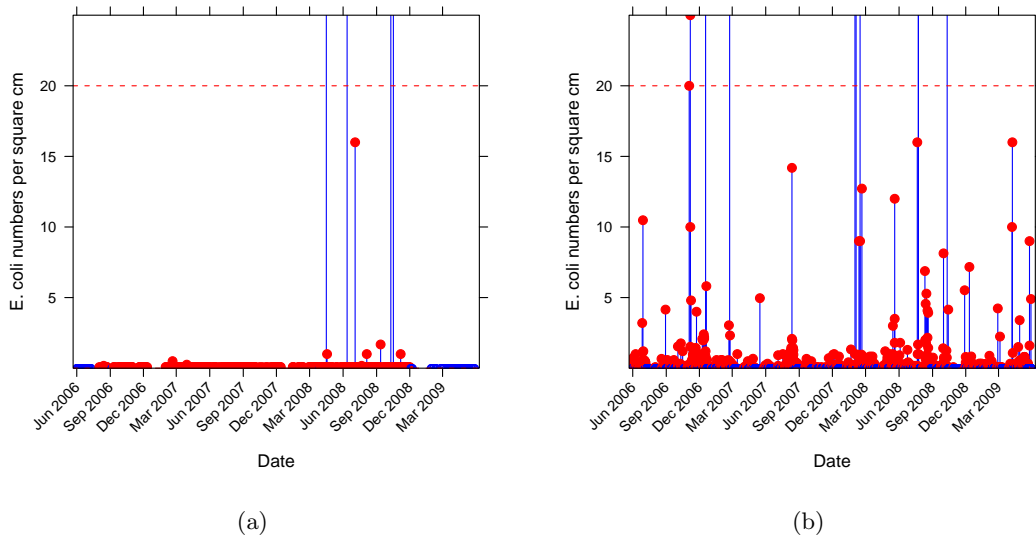


Figure 3: Time plot of *E. coli* tests for (a) Establishment and (b) all establishments — positive tests are presented as red points; negative tests are represented as circles.

### 3 *Salmonella* Summary

Table 5: *Salmonella* prevalence summary for this establishment and nationally.

	Plant	National
Tests	93	3763
Positives	0	11
Percent +ve	0.000	0.292
Lower Bound	0.000	0.146
Upper Bound	3.889	0.522

Table 6: *Salmonella* serovars for this establishment.

TestDate	Serotype
----------	----------

## 4 Glossary of Terms

### 4.1 Prevalence summary

**Tests:** The total number of samples (TVC, *E. coli* or *Salmonella*) in the ESAM database during the reporting period.

**Positives:** The number of samples with positive concentrations (ie. concentrations  $> 0$ ).

**Percent +ve:**  $100 \times \text{Positives}/\text{Tests}$ .

**Lower Bound & Upper Bound:** Lower and Upper 95% Confidence Bounds. The “true” prevalence is expected to be in this range.

### 4.2 TVC and *E. coli* count summary

All concentration data are converted into logarithms with base 10, given by  $\log_{10}$  cfu/cm<sup>2</sup>.

**Minimum:** Minimum concentration.

**Q1 or 1st Quartile:** 25% of the data are less than this value, 75% are more.

**Q3 or 3rd Quartile:** 75% of the data are less than this value, 25% are more.

**Median:** 50% of the data are less than this concentration, 50% are more,

**90th Percentile:** 90% of the data are less than this value, 10% are more.

**95th Percentile:** 95% of the data are less than this value, 5% are more.

**99th Percentile:** 99% of the data are less than this value, 1% are more.

**Maximum:** Maximum concentration.

**Mean:** The average.

**Standard Deviation (SD):** A measure of spread (or variability) about the mean.

### 4.3 Box plot

A graphical tool to assess the data.

- The solid dot is the median.
- The box contains half the data.
- The lower and upper bounds of the box are the 1st and 3rd quartile.
- The inter-quartile range (IQR) =  $Q3 - Q1$
- The length of the whiskers is calculated by  $\pm 1.5 \times \text{IQR}$ . The end of the whiskers corresponds to the observation in the dataset that is closest to this defined value.
- Observations falling outside the extent of the whiskers are indicated separately. Values falling far outside the whiskers indicate unusual or extreme values.

#### 4.4 Time plot of *E. coli* concentrations over time

This plot useful to compare the level of *E. coli* at individual plants over time compared to that found nationally over the same sampling period.

- Positive tests are represented as red dots; negative tests as blue open circles.
- Red (dashed) horizontal lines show the ‘m’ and ‘M’ values for that species.
  - The value of ‘m’ and ‘M’ for each species is defined in Appendix 1 of AQIS Meat Notice 2003/6.
  - Observations **below** the defined value ‘m’ are considered to have Acceptable levels of *E. coli*.
  - Observations **above** the defined balue ‘M’ are considered to have Unacceptable levels of *E. coli*.
  - The observations between ‘m’ and ‘M’ are considered to have Marginal levels of *E. coli*.