














Samplers

Based on the results of the pilot testing, the button sampler was selected for use in the full scale study.

Air Pump Tubing = 1/4 in D
Air Flow = 4 L / min optimum
Sampler = 1 in D



Removable filters

Field air flow calibration

20 mL

Sampling

Full scale sampler field installation

Button sampler

Vacuum tubing (1/2" diameter)

Air pump

Standard "T" post

5'-9" above ground level
(Height based on data from the Centers for Disease Control and Prevention)

Pathogens Measured

- *Campylobacter* (bacteria)
- *Salmonella* (bacteria)
- *E. coli* O157:H7 (bacteria)
- *Giardia* (protozoa)
- *Cryptosporidium* (protozoa)
- *Eimeria* (protozoa)
- Bovine polyomavirus

Traveling Gun

Typical full scale spray / sampler configuration

500 Ft. gun tow path distance

400 Ft

Upwind control

0 Ft

0 Ft

100 Ft

250 Ft

400 Ft

500 Ft

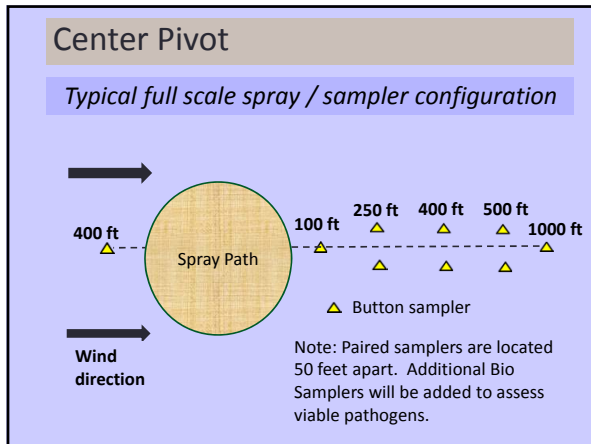
650 Ft

Wind direction

200 Ft wide spray path

Button sampler

Note: Paired samplers were located 50 Ft apart.



Traveling Gun Conditions

Weather conditions during testing – Fall 2012

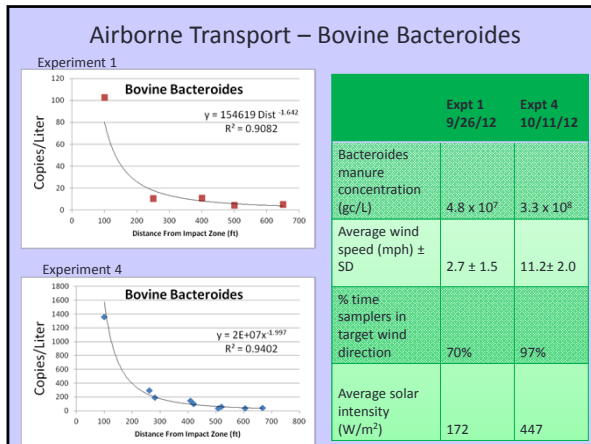
Date of Spray	Spray No.	Avg. Wind Speed (mph) (± St D)	Avg. Wind Gust (mph) (± St D)	Avg. Solar Intensity (W/m ²) (± St D)
Sep 26	1	2.7 (± 1.5)	4.2 (± 1.8)	172(± 57.1)
Sep 27	2	2.3 (± 1.6)	4.5 (± 2.2)	637 (± 8.40)
Oct 10	3	*12.9 (± 2.5)	*16.3 (± 2.9)	403 (± 212)
Oct 11	4	11.2 (± 2.0)	14.1 (± 2.6)	447 (± 159)

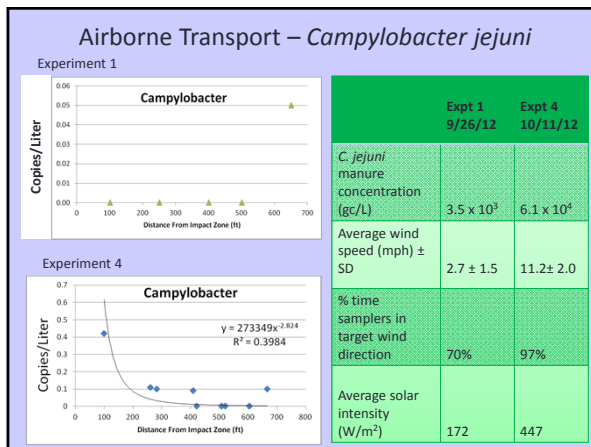
Note: (*) Indicates the highest recorded value within category

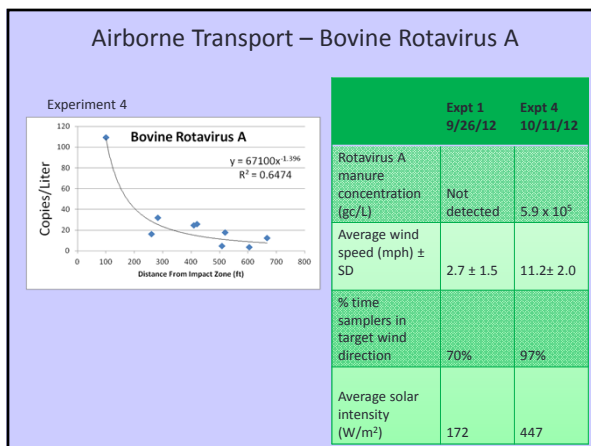
Center Pivot Conditions

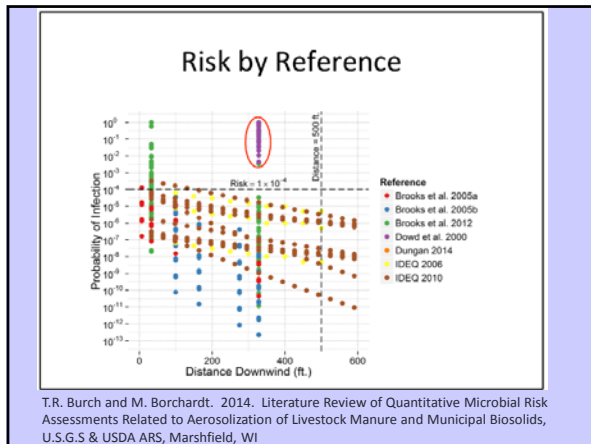
Weather conditions during testing – Fall 2012

Date of Spray	Spray #	Avg Temp (F)	Avg Wind Speed (mph) (+-StD)	Avg Wind Gust (mph) (+-StD)	Avg Solar Intensity (W/m ²) (+-StD)
6.7.2013	1	64.5	6.2 (+-1.2)	8.0 (+-1.3)	*916.3 (+-108.7)
6.11.2013	2	78.4	5.7 (+-2.0)	7.4 (+-2.1)	510.5 (+-191.6)
6.20.2013	3	*79.6	6.8 (+-1.5)	8.6 (+-1.8)	432.6 (+-206.7)
6.28.2013	4	72.6	*8.7 (+-2.0)	*12.0 (+-2.8)	617.7 (+-263.5)









Thank You!

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