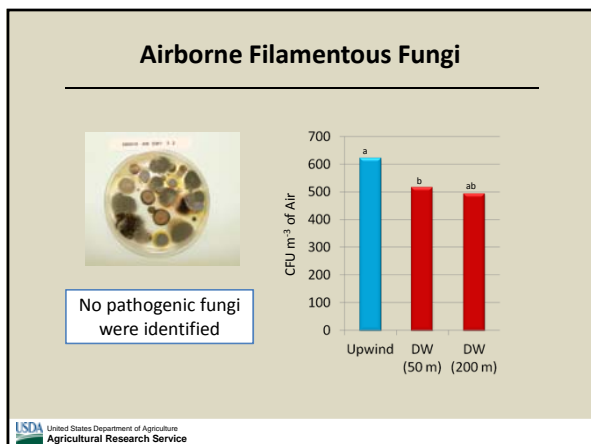
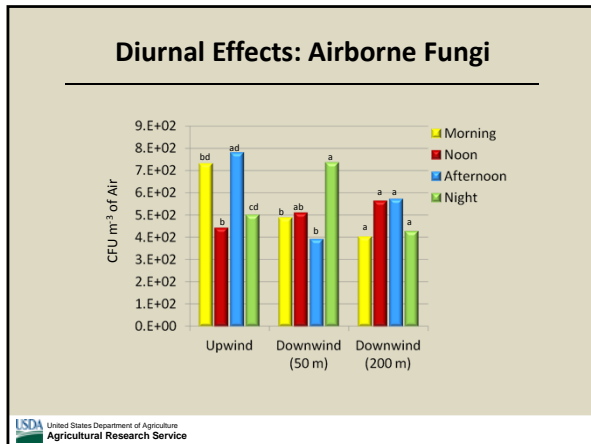


Comparison of Airborne Bacteria Concentrations at Livestock Operations

Operation	Bacteria Conc. (CFU m ⁻³)	Reference
Open-lot dairy (5 m) 200 m downwind	10 ⁵ 10 ⁴	Dungan et al., 2010
Open-freestall dairy (50 m) 200 m downwind	10 ⁴ 10 ³	Dungan et al., 2011
Land spreading of cattle and swine waste (20 to 200 m)	10 ⁴ to 10 ³	Boutin et al., 1988
Open-air swine house (inside)	10 ³ to 10 ⁶	Chang et al., 2001
Swine barn (inside) 150 m downwind	10 ³ 10 ²	Green et al., 2006

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Correlation Coefficients (*r*) Between Bioaerosol and Meteorological Factors

Item	Air Temp	Relative Humidity	Solar Radiation	Wind speed
Endotoxin	0.318	-0.150	-0.178	0.074
Bacteria	0.149	-0.166	-0.137	0.165
Fungi	0.138	0.117	-0.117	-0.246

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- ### Summary and Concluding Remarks
- Dairies are a source of elevated airborne bacteria and endotoxin concentrations (near the production facility)
 - Human pathogens were not detected in aerosol samples
 - Low risk of bioaerosol exposure at extended downwind distances (> 1500 m)
 - Occupational exposures at dairies is an area of concern
 - Dust mitigation strategies can help limit onsite exposures and offsite transport of bioaerosols
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Thank you

Robert Dungan
(208) 423-6553
robert.dungan@ars.usda.gov

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