Methods: An Anderson six-stage bioaerosol sampler, Anderson single-stage bioaerosol sampler, AGI-30, Biosampler, as well as TSA patri dish were used to sample bioaerosols. The identification and antibiotic-resistant characteristics of bacteria were studied by using Phoenix.
Results: The results showed that the relative humidity was between 46.3% and 80.9% and the temperature was between 17.5°C and 32.1°Cduring the sampling. The bioaerosol concentration in the coop for chicks was 3.2×10^4 to 5.8×10^5cfu/m^3 and that in the coop for chickens was about 1.0 to 2.0×10^6 cfu/m^3. Based on the bacteria identification, it was concluded that *Staphylococcus spp.* belongs to superior strains; moreover, *Staphylococcus lentus* dominated the number concentration of bacteria identification results. However, *Staphylococcus aureus* was the most dangerous bacteria belonging to the biological safety level II in the study.
Conclusions: The *Staphylococcus lentus* revealed antibiotic-resistant characteristics, for instance, Ampicillin (AM), Chloramphenicol (C), Clindamycin (CC), Gentamicin-Syn (GMS), Penicillin (P), Streptomycin-Syn (STS) cannot use to stop the growth of *Staphylococcus lentus.* In general, from the study, *Staphylococcus spp.* resisted to Ampicillin (AM), Streptomycin-Syn (STS), Gentamicin-Syn (GMS), Penicillin (P), Chloramphenicol (C).

SR-115-05
Effect of Relative Humidity on Impactor Sampling among Four Airborne Viruses

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Objective: People in a wide spectrum of occupations are exposed to viruses present in the air. This research investigated the influence of humidity on the viability of live virus aerosols and the particle sizes test viruses were associated with.
Methods: Four viruses – bacteriophage MS2, human adenovirus, transmissible gastroenteritis virus of pigs, and avian influenza virus – were aerosolized separately into an apparatus from suspensions using a nebulizer. The relative humidity in the apparatus was conditioned to 15, 50, and 85% at room temperature. An 8-stage Andersen impactor with aluminum plates was used to sample the test aerosols. Collected material was eluted from each impaction surface, and the amounts of live virus present were determined using standard virology techniques. By comparing the amount of live virus collected versus the concentration in the nebulizer suspension against the recovery of a fluorescent dye versus its concentration in the suspension, the relative recovery (R) of live virus was measured, with R=1 equivalent to 100% recovery.
Results: Relative recovery varied widely by virus, ranging from a minimum R=0.02 to a maximum of R=1. On average, MS2 aerosols yielded the highest values of R and avian influenza virus had the lowest relative recovery. All test viruses were affected by relative humidity. Compared to other conditions, MS2 recovery was highest at 50% relative humidity although transmissible gastroenteritis virus recovery was lowest. Recovery of human adenovirus was highest at 85% relative humidity ($p=0.0002$). Versus 15 and 50% relative humidity (R=0.02 to R=0.06), recovery of live avian influenza virus was markedly higher at 85% relative humidity (R=0.59, $p<0.0001$). Relative humidity affected the particle sizes that live human adenovirus could be recovered from.
Conclusions: Relative humidity affects the viability of live virus aerosols during size-selective sampling, but the effects may vary widely between different viruses.

SR-115-06
Comparing Remel M5 and PBS Solution for Collecting Active Bacteriophage MS2 Viral Surrogate using the XMX/2L-MIL

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Objective: The objective of this research was to determine if Remel M5 collection media would better preserve for laboratory analysis bacteriophage MS2 virus surrogate agent (MS2) than the commonly used PBS solution collection media at airborne concentrations of approximately 10 agent containing particles per liter of air (ACPLA).

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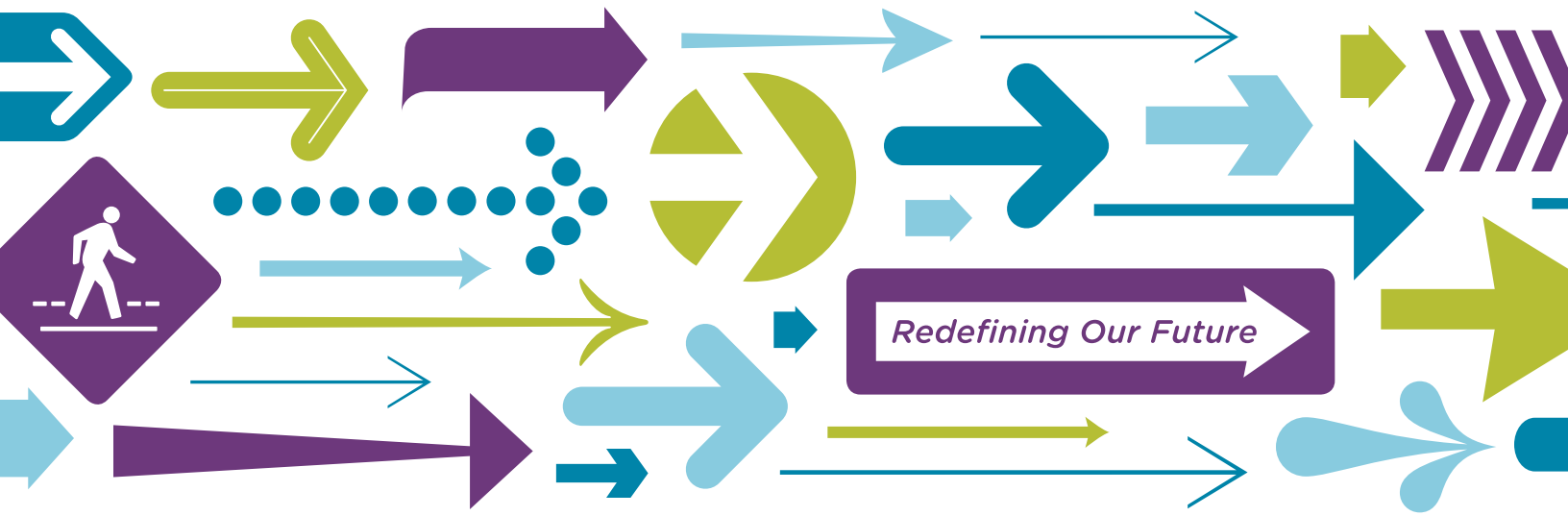

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