The Connecticut Agricultural Experiment Station

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New Study Finds Testing Sewage is a Highly Accurate Predictor of SARS CoV-2 Activity in the Community

New Haven, CT- Dr. Doug Brackney from the Department of Environmental Sciences at The Connecticut Agricultural Experiment Station (CAES) and scientists from Yale University have recently published their collaborative findings describing the use of sewage to surveil SARS CoV-2 activity and found virus levels in the sewage can serve as a leading indicator of infections within the community. The findings were posted in the journal *Nature Biotechnology*.

SARS CoV-2 is the causative agent of COVID-19 and is responsible for the current pandemic. Like other coronaviruses, SARS CoV-2 infected individuals shed virus in their feces which can then be detected in sewage at local treatment facilities. Given this, researchers at CAES and Yale University hypothesized that levels of coronavirus in the sewage collected from the East Shore Water Pollution Abatement Facility would reflect the rate of SARS CoV-2 infections in the New Haven metropolitan area. Comparison of viral concentrations to confirmed cases and hospitalizations revealed that increases in

viral loads in sewage preceded an increase in hospitalization and confirmed cases. "These data suggest that constant sampling of sewage from local water treatment facilities could serve as an early indicator of community-wide virus activity" said Dr. Doug Brackney from CAES, where virus detection and quantification was performed. "Such approaches could be an important tool for informing public health decisions" he added.

Dr. Jason C. White, Director of CAES, notes that "In addition to continued viral surveillance, CAES will be undertaking additional testing of wastewater effluent for the analysis for pharmaceuticals such as hydroxychloroquine and other antiviral compounds, as well as anti-depressants and other medications."

Journal Reference

Jordan Peccia, Alessandro Zulli, Doug E Brackney, Nathan D Grubaugh, Edward H Kaplan, Arnau Casanovas-Massana, Albert I Ko, Amyn A Malik, Dennis Wang, Mike Wang, Daniel M Weinberger, Saad B Omer. SARS-CoV-2 RNA concentrations in primary municipal sewage sludge as a leading indicator of COVID-19 outbreak dynamics. *Nat Biotechnol*. 2020 Sep 18. doi: 10.1038/s41587-020-0684-z

Picture Legend: CAES Associate Scientist Dr. Doug Brackney and Yale technician Annabelle Pan running diagnostics on sewage samples.

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