

**Title:** "Recovery and Identification of Airborne Microorganisms in Swine Facilities Using Selective Agar and Thin Agar Layer (TAL) Resuscitation Media" - NPB#02-023

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**Abstract:** Thin Agar Layer (TAL) medium was developed at Kansas State University to improve resuscitation of injured cells, and has been shown to result in higher recovery than selective media alone for cold, heat, salt, or acid injured cells. This experiment was designed to determine the effectiveness of the TAL method for the recovery of injured organisms in air. Eleven agar media were used for the experiment: Tryptic Soy agar (TSA), MacConkey Sorbitol agar (MSA), TAL-MSA, Baird-Parker agar (BP), TAL-BP, Modified Oxford agar (MOX), TAL-MOX, Xylose Lysine Sodium Desoxycholate agar (XLD), TAL-XLD, Yersinia Selective agar (CIN), and TAL-CIN. The TAL plates were prepared by pipetting 6 ml of a selective agar into a BBL Rodac™ plate (65 mm x 15 mm). Selective agar was allowed to solidify, then each plate was overlaid with 6 ml of TSA. Selective agar plates were prepared by pipetting 12 ml of agar into BBL Rodac™ plates and then solidifying. Samples were taken at an indoor swine facility in 5 separate locations using a BioScience SAS air sampling instrument. For each plate, 10 L of air was sampled. Three replications of the experiment were performed. The TAL method resulted in higher total and 'Visually Typical' counts of microorganisms on all media. In addition, 177 isolates were selected randomly and identified to test the selectivity of TAL and selective media for target organisms. This data has shown that the TAL resuscitation method is a very effective and necessary procedure for the recovery of injured organisms in air.

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