

Title: Risk Factors for the Occurrence of drug resistant *Salmonella* spp. in commercial swine production **NPB #02-141**

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Abstract: We studied *Salmonella* isolates from collected from 132 Midwestern swine herds. A total of 1,558 *Salmonella* isolates were detected in lymph node samples collected at slaughter. As measured by a laboratory test, the antimicrobial drugs to which these isolates were most commonly resistant were tetracycline (52.7%), sulphamethoxazole (41.8%), streptomycin (37.7%). Less than one percent of isolates were resistant to ciprofloxacin, amikacin, ceftriaxone, trimethoprim / sulphamethoxazole, nalidixic acid and ceftiofur. Resistance to more than one antimicrobial was found for 47.4% of isolates, with 14.2% of isolates resistant to five or more antimicrobials. Tetracycline resistance was associated primarily with one gene, tet (C), and resistance to tetracycline was also associated with resistance to several other antimicrobials. Detection of this tetracycline gene was not associated with the use of tetracyclines in the particular market group of pigs studied, suggesting that tetracycline resistance genes, once acquired, are not quickly lost in a population.

Farm factors associated with increased risk of antimicrobial resistance in *Salmonella* were using more than one nursery barn to provide pigs to a grower/finisher barn and providing feed in a pelleted form. Identification of these risk factors provides guidance for further research to characterize ways to control shedding of drug resistant *Salmonella*.

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