

INTERNATIONAL TRADE

Title: Estimation and validation of safe withdrawal times to satisfy export market residue limits (MRLs) for tetracyclines, sulfonamides, and aminoglycosides in target tissues in swine – NPB #09-256

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Scientific Abstract:

The main objective of this pharmacokinetics projects was to assess whether water medications can result in violative residues in blood and tissues of weanling and slaughter weight pigs in a commercial setting. Because of time and cost constraints only sulfamethazine and tetracycline mediations were assessed in these two age classes. Pigs were treated at the recommended dose and dose intervals (4 days) and then slaughtered at specific time periods including the approved withdrawal times and several days beyond the approved withdrawal times. Five (5) time points and 5 replicate pigs for each treatment group were used in this study. Special emphasis was placed on collecting stomach tissue amongst other tissues. Analysis of the tetracycline and sulfamethazine in plasma, muscle, liver, kidney, and stomach tissue data in weanling and slaughter weight pigs demonstrated that these drugs can remain within several tissues, including stomach tissue, beyond the labeled WDT. There were clear differences in withdrawal times between weanling and finisher pigs. Our analyses further demonstrated that WDT should be significantly increased when pork products are exported to jurisdictions with MRLs significantly lower than US tolerances.

These research results were submitted in fulfillment of checkoff-funded research projects. This report is published directly as submitted by the project's principal investigator. This report has not been peer-reviewed.

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