

# Tetracycline residues in swine slaughtered in provincially inspected abattoirs in Alberta

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Today's technology can detect minute quantities of drug residues in meat. However, there is little data to indicate that drug residues below the Maximum Residue Limits (MRL) defined by Health Canada are a human health risk. Since some policy makers are advocating "zero tolerance" for drug residues in meat, knowledge about the prevalence of low level drug residues and associated risk factors is important. This study determined the prevalence of tetracycline residues in sows, market hogs and underweight pigs slaughtered at provincially inspected abattoirs in Alberta. Whole kidneys were collected from systematically selected pigs that were slaughtered between October 1st and December 31st, 2001. Samples were randomly assigned to plants in proportion to the number of pigs normally slaughtered at that facility. Commercial CHARM radioimmunoassay test kits were used as a screening method. Suspect positives were confirmed and quantified by Liquid Chromatography-Tandem Mass Spectrometry (LC-MS/MS). None of the 804 samples analyzed, contained tetracycline compounds above their respective MRL's. A number of kidneys contained detectable levels of tetracyclines below their respective MRL's: 24 (3.0%) for tetracycline, 44 (5.5%) for oxytetracycline, and 133 (16.5%) for chlortetracycline. The majority of kidneys with detectable tetracyclines were from underweight pigs (59% (141/238)), although tetracycline was found in 22% (78/351) of market pig kidneys.

## **Implications:**

Tetracycline residues below their respective MRL's were found in over 15% of the pig kidneys in this study. Chlortetracycline was found with the greatest frequency, indicating that medicated feed is the more common source of residues. Drug levels in muscle tissue from these pigs would have been much lower, and likely undetectable. Further on farm investigation is required to determine the cause of these residues.