

ANTIBIOTIC RESIDUES IN THE MILK OF COWS TREATED UNDER FIELD
CONDITIONS, USING DRUG PRODUCTS IN LABEL AND EXTRA-LABEL FASHION

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The objective of this study was to determine if antibiotic residues occur in the milk of cows beyond label withholding times after treatment under field conditions. Dairy farms within a 30 minute drive of the laboratory were asked to provide milk samples from cows treated with antibiotics. Treatment decisions were made by the farmer, sometimes in consultation with a veterinarian, but these decisions were not influenced by the researchers. Milk samples were collected from the treated quarter of mastitis cases and from any single quarter in non-mastitis cases, immediately prior to treatment, then daily for six days after conclusion of therapy. A brief questionnaire was administered to farmers to determine the drug(s) used as well as dose, frequency, route of administration and other details of treatment.

Antibiotic residues (inhibitors) in milk samples were detected by the Brilliant Black Reductase Test (BR Test) and the Bacillus stearothermophilus var calidolactis disc assay using standard techniques. Cows were considered test-positive beyond the withholding time if both BR and disc assay tests were positive. In cases where cows were treated with more than one formulation, the longest formulation withholding time was used. For each case (cow treatment series), the drug product used, route, dose, and frequency of treatment were considered to establish whether these characteristics were consistent with drug label instructions or were "extra-label". Factors of interest, including drug used, route of administration, disease treated and label or extra-label use, were tested for statistically significant association with the binary outcome, prolonged excretion of milk residues. Chi square and Student's T tests, analysis of variance and logistic regression were used when appropriate.

Series of milk samples were received from 228 cows on 48 farms which were treated with a variety of antibiotics, mainly by the intramammary route. Milk samples from 15 cows were test-positive after the withholding time for the drug(s) used. Although most of the 15 cows were treated in extra-label fashion, this and most of the other factors examined were not statistically associated with an altered risk of antibiotic residues in milk.

These results indicate that antibiotic residues sometimes appear in milk from cows treated under field conditions after the drug formulation label withholding time has been surpassed.

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