

CEFQUINOME CONCENTRATION IN MILK FRACTIONS

Residue concentration of cefquinome considering different milk fractions and performance of two screening tests

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SUMMARY

This Research Communication describes the residue concentration of a dry cow antibiotic and the milk composition in two different milk fractions and furthermore, the effect of milk fraction and milk composition on the test performance of a rapid screening and a microbial inhibitor test. Thirteen dry cows were treated with an intramammary dry cow antibiotic containing 150 mg cefquinome. Quarter foremilk and stripping samples were collected on the first 10 d postpartum. All milk samples were analyzed for milk composition by the local Dairy Herd Improvement Association and were tested for antibiotic residues using the rapid screening test Milchtest BL and the microbial inhibitor test Delvotest BR Brilliant Plates. The residue concentration of cefquinome was determined in foremilk and stripping samples from milkings 1, 2, 3, 5, and 7 after calving using high performance liquid chromatography – tandem mass spectrometry. In our study, the logarithm of cefquinome concentration (logCef) was higher in foremilk than in stripping samples and higher in milk samples with lower lactose content.

Furthermore, logCef decreased with the number of milking ($P < 0.001$). The Milchtest BL was more likely to be not evaluable in stripping samples and milk samples with increased protein content. In the Delvotest BR Brilliant Plates milk samples with higher protein content were more likely to have a false positive result. These results indicate that foremilk should be the recommended milk fraction to be tested for residues of cefquinome and that high protein content should be considered as a cause of test failure and false positive results when milk during the first 10 d postpartum is tested for antibiotic residues using screening tests.