

**Beta lactam antibiotics residues in cow's milk: comparison of efficacy of three commercial screening tests used in Bosnia and Herzegovina**

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Beta ( $\beta$ ) lactam antibiotics are widely used as therapy for bacterial infections in cattle, especially for mastitis. Monitoring of antibiotic residues in cow's milk in Bosnia and Herzegovina (BiH) is in accordance with the European Union standards. All commercial dairies use antimicrobial residue tests, and 95% of the testing is for  $\beta$  lactams. The aim of this presentation is to show the results from a study conducted to evaluate and compare the efficacy of three most widely used screening tests for  $\beta$  lactam residues in cow's milk in BiH. Following tests were used in the study: SNAP  $\beta$  Lactam test (Idexx), Rosa Charm  $\beta$  Lactam test (Charm Sciences) and Inhibition MRL test (A&M), applied by testing procedures as prescribed by their manufacturers. Study samples included: 10 each of the six standardized concentrations of penicillin (0, 2, 3, 4, 5 and 6 ppb) and 120 milk samples from four study animal groups. The groups included: 30 animals treated with  $\beta$  lactams for diseases other than mastitis, 30 animals treated with  $\beta$  lactams for mastitis, 30 animals treated with  $\beta$  lactams but sampled after withholding period and 30 animals not receiving any antibiotic therapy during current and prior lactation. Analytic sensitivity was determined for each test using standard penicillin concentrations. Agreement of the tests results was assessed in each study animal group using Kappa coefficients with correspondent 95% confidence interval calculated for each test pair. Even though rapid tests for  $\beta$  lactam residues have many advantages, positive results for concentrations of residues under prescribed maximum residue limit (MRL) result in unnecessary losses of milk and cost related to its disposal.