

Selection of cows for treatment at dry-off on organic dairy farms

Klemens Kiesner^{1, 2}, Nicole Wente¹, Otto Volling³, Volker Krömker^{1, 2*}

¹ Faculty II, Department of Bioprocess Engineering - Microbiology, University of Applied Sciences and Arts Hannover, Heisterbergallee 12, 30453 Hannover, Germany

² Clinic for Cattle, University of Veterinary Medicine Hannover, Foundation, Bischofsholer Damm 15, 30173 Hannover, Germany

³ Bioland e.V., Bahnstraße 15d, 27374 Visselhövede, Germany

Short title: **Selective dry cow therapy on organic farms**

*Correspondence: Volker Krömker

Faculty II, Department of Microbiology

University of Applied Sciences and Arts Hannover

Heisterbergallee 12

30453 Hannover

Germany

E-mail: volker.kroemker@hs-hannover.de

Summary

Restrictions regarding the use of antibiotics make selective antibiotic dry cow therapy (DCT) mandatory on organic farms. This requires methods for identification of cows with an intramammary infection (IMI) at dry-off. The aim of this field study was to create a decision scheme for DCT based on cow level factors evaluated for identification of IMI and for influence on the probability of cure and new infection (NI) during the dry period. Therefore data from 250 cows from five organic farms were collected including somatic cell counts (SCC) from Dairy Herd Improvement (DHI) records, California mastitis test (CMT) results at dry-off, clinical mastitis (CM) history, parity and dry-off treatment. IMI at dry-off were most efficiently identified using a geometric mean SCC of 100,000 cells/ml as threshold and either one or three DHI records prior to dry-off. Using a combination of SCC with either, CM history, CMT or parity slightly increased the sensitivity (SE). The probability of cure was associated with antibiotic DCT, application of an internal teat sealant (ITS) and dry period length. Risk of NI was associated with ITS and infections with minor pathogens at dry-off. Compared to the selection performed by the farmers during the study period identification of IMI based on a selection criterion with defined threshold had higher SE.