

Supplement Table S1. Overview of the calculated models and their corresponding sample sizes to investigate the effect of different dry cow therapies on the parameter milk yield, somatic cell count and diagnosed clinical mastitis cases

Model	Syntax <sup>1</sup>	n <sup>2</sup>
Model 1 - full	MYR ~ abDCT(yes-no) + breed + parity + log10(SCCb) + log10(SCCa) + (1 herd) + (1 animal)	1380
Model 1 - final	MYR ~ abDCT(yes-no) + parity + log10(SCCa) + (1 herd)	1380
Model 1a	MYR ~ abDCT(group) + parity + log10(SCCa) + (1 herd)	1380
Model 1b	MYR ~ pathogen(group):abDCT(yes-no) + parity + log10(SCCa) + (1 herd)	113
Model 2 - full	CCR ~ abDCT(yes-no) + breed + parity + sqrt(milk yield before) + (1 herd) + (1 animal)	1380
Model 2 - final	CCR ~ abDCT(yes-no) + parity + sqrt(milk yield before) + (1 herd) + (1 animal)	1380
Model 2a	CCR ~ abDCT(group) + parity + sqrt(milk yield before) + (1 herd) + (1 animal)	1380
Model 2b	CCR ~ pathogen(group):abDCT(yes-no) + parity + sqrt(milk yield before) + (1 herd) + (1 animal)	113
Model 3	IMGa ~ IMGb*abDCT(yes-no) + (1 herd)	3462
Model 3a	IMGa ~ IMGb*abDCT(group) + (1 herd)	3462
Model 3 reduced	IMGa ~ IMGb + (1 herd)	3462
Model 4	CM30(yes-no) ~ IMGb*abDCT(yes-no) + (1 herd)	3423
Model 5	CM90(yes-no) ~ IMGb*abDCT(yes-no) + (1 herd)	3423

<sup>1</sup>Syntax of the Models: MYR = milk yield ratio in 305 DIM from the milk recording data before and after dry cow therapy; abDCT(yes-no) = antibiotic or non-antibiotic dry cow therapy; log10(SCCb) = SCC from the last milk recording data before dry cow therapy; log10(SCCa) = SCC from the first milk recording data after calving; abDCT(group) = different antibiotic dry cow therapy groups; pathogen(group) = results of bacteriological examinations classified in major pathogens, minor pathogens, other pathogens and negative test results; CCR = cell count ratio from the last milk recording data before dry cow therapy and the first SCC after calving; sqrt (milk yield before) = square root from the milk yield in 305 DIM from the milk recording data before dry cow therapy; IMGa = inflammation of the mammary gland after calving defined via SCC threshold of >200,000 cells/mL in the first milk recording data after calving; IMGb = inflammation of the mammary gland before dry-off defined via SCC threshold of >200,000 cells/mL in the last milk recording data before dry-off; CM30(yes-no) = diagnosed clinical mastitis cases by veterinarians within 30 DIM; CM90(yes-no) = diagnosed clinical mastitis cases by veterinarians within 90 DIM;

<sup>2</sup>total number of dairy cows included in the respective Model.