

PREDICTION OF PERSISTENCY AT DAY 305 IN LACTATION AT THE MOMENT OF THE INSEMINATION DECISIONYongyan Chen, Wilma Steeneveld, Mirjam Nielen, Miel Hostens.

Utrecht University, Utrecht, Netherlands.

When deciding on the voluntary waiting period of an individual cow, it would be very useful to have insight into the persistency for the remainder of that lactation at the moment of the insemination decision. Currently, breeding values for persistency are calculated for dairy cows but, to our knowledge, prediction models to accurately predict persistency at the moment of insemination are lacking. This study aimed to predict lactation persistency at 305d at different insemination moments (DIM 50, 75, 100 and 125). Available cow and herd level data from 2005–2022 were available for 16,980 cows from 84 herds located throughout the Netherlands and Belgium. Persistency was measured by the lactation decay representing the time to half milk production. Four linear regression models for each of the selected insemination moment were built separately to predict decay at DIM 305 (decay-305). Independent variables included the decay at the selected insemination moment, other milk production variables, calving season and parity group. The average decay-305 of primiparous cows was lower than that of multiparous cows ($1.7 \cdot 10^{-3}$ vs $2.3 \cdot 10^{-3}$, equivalent to a persistency of 408 vs 301 days, respectively). Results showed that our models were not able to accurately predict persistency, although predictions improved at later insemination moments, with R^2 values ranging between 0.24 and 0.32. It can thus be concluded that, based only on milk production information, it is not possible to accurately predict persistency at the end of the lactation.

