THE EFFECT OF SEWERAGE OVERFLOWS ON PRODUCTION AND FERTILITY OF DAIRY COWS DRENCHED WITH SURFACE WATER


More than 50% of the dairy farmers in The Netherlands use surface water as the main source of drinking water for their cows, during the grazing season. Approximately 10% of these farmers use surface water that is in direct contact with a sewerage overflow. The associated health risks for dairy cows are unknown. Therefore, we compared production and fertility data of cows from 60 farms using surface water, known to be in direct contact with a sewerage overflow, with that of 397 farms using surface water, known not to be in contact with a sewerage overflow. Cows that were drenched with water that was in direct contact with a sewerage overflow tended to produce less milk (-0.9 l/d; P < 0.09). Also, age at first calving was higher (804 vs. 784 d; P < 0.01), the interval between calving and successful insemination was longer (128 vs. 124 d; P < 0.14), and the percentage of cows having abortions tended to be higher (8.3 vs. 7.1 %; P < 0.12). These tendencies of impaired production and fertility strengthen earlier suggestions that sewerage overflows put production and fertility of dairy cows at risk. Based on a literature survey, nitrite and nitrate, sulphur containing compounds, and xeno-estrogens were identified as agents which might be involved in causing these effects. Also, pathogens like Cryptosporidium, Giardia, Neospora, and Vibrio cholera, are possibly discharged into surface water by sewerage overflows.