

Gastrointestinal nematode infection during the second grazing season of heifers reared with nurse cows during the first grazing season in France.

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Rearing dairy calves with nurse cows is increasingly carried out in France. During their first grazing season (FGS), calves generally have regular increase but low gastrointestinal nematodes (GIN) infection due to the suckling and a dilution effect with the presence of immune cows. This low exposure could influence the acquisition of GIN immunity and the level of infection of weaned heifers during their second grazing season (SGS). The aim of this study was to describe the variability of GIN infection of heifers in SGS according to their grazing history in FGS.

In 34 groups of heifers (n= 312) from 19 farms, weight, fecal egg counts, pepsinogen concentration and *Ostertagia* ELISA ODR were measured on each heifer at the end of FGS in 2019 and three times during SGS in 2020. The variability of GIN markers at the end of SGS was analysed using logistic regressions.

The evolution of GIN markers in SGS of heifers with a short FGS (<90 days) corresponded to a typical FGS pattern, whereas heifers with a long FGS (>180 days) showed a low fecal egg count indicating the expression of immunity. However, regardless of the duration of FGS, pepsinogen concentration and *Ostertagia* ELISA ODR at the end of the SGS were high suggesting either high level of infection with low growth or abomasal inflammation.

A long FGS is recommended to ensure low and prolonged exposure to GIN in calves with nurse cow and earlier development of immunity in SGS.

Key words: dairy calves, nurse cows, organic farming, gastrointestinal nematodes, second grazing season, Cow-calf contact