

Publication

A multicomponent herbal feed additive improves somatic cell counts in dairy cows a two stage, multicentre, placebocontrolled longterm onfarm trial

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In contrast to natural and historical diets of wild and domesticated ruminants, the diversity of plant species is limited in diets of modern dairy cows. Are "production diseases" linked to this? We conducted a trial to test the effects of a multicomponent herbal feed additive (HFA) on health, performance and fertility traits. A dose-finding study (DF) with 62 cows on 11 commercial farms compared a low (50äg) and a high (100äg) dose of HFA (HFA-50, HFA-100) with a placebo (PL). In a subsequent field trial (FT) with 280 cows on 30 commercial farms, HFA-100 was compared to PL. Cows were randomly assigned to HFA and PL groups and received HFA or PL individually daily from 14ädays pre- to 300ädays post-calving. Data were analysed with mixed effects models. No differences between HFA and PL were found regarding performance, body condition score and overall culling rates. A tendency towards lower milk urea for HFA-100 compared to PL ($p\check{a}=0.06$) was found in DF. HFA significantly reduced elevated milk acetone observations ($\geq 10\check{a}mg/L$) in the first 10 lactation weeks (HFA-100: 4%; HFA-50: 4%; PL: 12%)äin DF. HFA-50 significantly reduced lameness incidence (HFA-100: 11%; HFA-50: 2%; PL: 14%)äin DF. Calving intervals were 15ädays shorter in HFA compared to PL in both trials, which could be confirmed by tendency ($p\check{a}=0.07$) in FT. In both trials, the proportion of test days with elevated somatic cell score (≥ 3.0) was significantly lower in HFA compared to PL (DF: HFA-100: 40%, HFA-50: 45% and PL: 55%; FT: HFA-100: 38% and PL: 55%) which is also reflected by tendency ($p\check{a}=0.08$) in lower culling rates due to udder diseases in FT. HFA showed no negative impact on any of the measured parameters. The effects of HFA indicate a potential of phytochemically rich and diverse feed additives for dairy cows' nutrition and physiology.

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