

# OASES – Abstract: preview

## Abstract # 13601

Effect of a dietary escape microbial protein on production and fertility in Italian dairy cows  
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Excess protein represents significant financial and biological costs to dairy enterprises. However, overly high levels of crude protein (CP) are often still fed with little attention to the quality of protein included. This trial investigated the potential for lowering overall ration CP using a dietary escape microbial protein (DEMP®, Alltech Inc., KY). Holstein Friesians (n=138) were allocated to one of two dietary treatments: Control (C; n=69, DIM 151, parity 2.6) - basal diet (maize silage, commercial concentrate, alfalfa hay, sugar beet pulp, straw; CP 163.2 g·kg DM<sup>-1</sup>); Treatment (T; n=69, DIM 173, parity 2.6) - basal diet reformulated to contain 0.3 kg DEMP (CP 155.2 g·kg DM<sup>-1</sup>). Intakes averaged 25 kg DM·d<sup>-1</sup>. Animals remained on trial for five months (May-September 2011). Milk yield, composition and urea, as well as days from calving to conception were measured. Data were analysed using Two-way T-test unless abnormally distributed (Wilcoxon Rank Sum test). Initial fat-corrected milk yields (FCM) were similar at 36.2 for C vs. 34.8 kg·d<sup>-1</sup> for T, but diet reformulation with 0.3 kg of DEMP resulted in a significant (p<0.001) increase by the end of the trial (29.2 and 34.5 kg FCM·d<sup>-1</sup> for C and T, respectively). Similar trends were noted for milk fat content where non-significant increases were seen (32.6 for C vs. 32.8 g·kg<sup>-1</sup> for T). There was no effect of treatment on milk protein. By the end of the trial, milk urea levels were significantly (p<0.001) lower for the animals fed the reformulated diet compared to C (20.7 vs. 28.8 mg·dl<sup>-1</sup>, respectively). Days from calving to conception were non-significantly reduced from 143 to 137 for C and T, respectively. Nitrogen use efficiency was non-significantly increased by 0.012 (0.286 for C vs. 0.298 for T). These data demonstrate benefits of improving N use efficiency by reformulating rations to provide a more suitable protein profile.