

Abstract by David Lawrence - The effect of offering two levels of concentrate, at a variable and flat rate, on total mixed ration intake

Irish winter milk production systems are moderate input-moderate output systems. They require increased milk yields and a high level of feed efficiency per animal to sustain their success. Feed intake is a cornerstone to increased milk production; this study aims to measure the effects of variable and flat rate concentrate feeding when offered at a high and low level, on total mixed ration (TMR) intake. A herd of 60 autumn calving cows were blocked based on calving date, parity and milk yield from days 21 -35 post partum, BCS and body weight. A high quantity of concentrate (Hi: 8.5 kg) and a low quantity (Lo: 5.5 kg), were offered at a flat rate (F) or variable rate (V). Cows were randomly assigned to one of the following four treatments: HiF, HiV, LoF, or LoV. The variable rate groups were divided into high (H), low (L) and average (M) yielding cows. The HiV group was offered (HiH: 10.5 kg, HiM 8.5kg and HiL 6.5 kg of concentrate) and the LoV group was offered (LoH: 7.5 kg, LoM: 5.5kg and LoL: 3.5kg of concentrate). Concentrate input remained constant during the experiment. The study was conducted over a 15-week period from week six of lactation. The TMR consisted of grass silage, maize silage, soya and molasses. There was a tendency for an interaction between feeding rate and level of concentrate supplementation ($P=0.09$), which indicated that cows in the LoF group had a lower TMR, dry matter intake (DMI: 11.9 kg) than all other treatments. Cows offered a variable rate of concentrate supplementation had a TMR DMI 0.9 kg DM/cow/day greater ($P<0.01$) than cows offered a flat rate of concentrate supplementation (12.3 kg DM/cow/day). There was no difference in TMR DMI when concentrate was offered at a high or low level (12.8 kg DM/cow/day).