

Variation between individuals in voluntary intake and herbage intake of grazing dairy cows

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Introduction Herbage intake and milk yield of unsupplemented grazing dairy cows are highly variable between animals within a herd (Delaby et al., 2001). The objective of this experiment was to describe the relationship between the individual voluntary intake (VI) of dairy cows measured before turnout and their herbage intake at grazing, at two herbage allowances.

Materials and methods The individual voluntary intake of a total mixed ration (VI_{TMR}, maize silage/concentrate ratio: 70/30) was measured indoors for 3 weeks in March with 16 Holstein dairy cows that were 90 ± 11 days in lactation. After a transition period in April, cows strip-grazed exclusively pure ryegrass or ryegrass-white clover mixtures, at two herbage allowances (HA: Low 20 and Medium 35 kg DM/cow per day to ground level). Individual herbage intake at grazing was estimated in May and June in four 10-day periods, twice per cow for each HA, as described by Ribeiro Filho *et al.* (2005). The expected VI (eVI) during the grazing period was estimated assuming a theoretical decrease from the VI_{TMR} of 0.57 kg DM/day per month (Faverdin *et al.*, 1987). The expected milk yield (eMY) was estimated from the milk yield of the reference period and assuming a theoretical weekly persistency of 0.98 (Delaby *et al.*, 2001).

Results The herbage intake at grazing averaged 64% of the eVI (14.6 vs. 22.9 kg DM/day), and increased between cows by 0.34 kg DM/day for each kg of eVI. However, in the range observed, herbage intake at grazing decreased from 75 to 60% of the eVI with increasing eVI. The between-cow range of intake at grazing was independent of the herbage allowance. Even under very severe grazing conditions (Low HA), cows with highest VI_{TMR} ingested 3 kg DM/day more than cows with lowest VI_{TMR}. The herbage intake at grazing increased between cows by 0.27 kg DM/day for each kg of eMY.

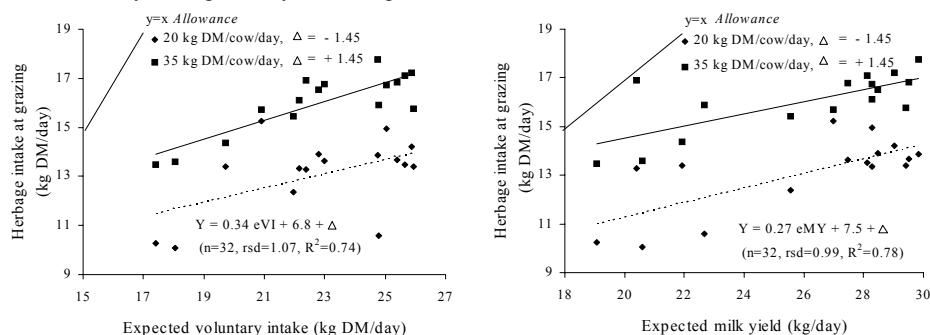


Figure 1 Relationship for individual cows between the expected voluntary intake and milk yield during the grazing period and the actual herbage intake at grazing.

Conclusions The herbage intake of grazing dairy cows largely depends on their individual voluntary intake capacity independently of the grazing conditions. The range in herbage intake due to the variability of voluntary intake between individuals is larger than that associated with differences in herbage allowance.

References

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