

Feeding Behaviour and Response to Weaning of Calves Fed Limited or Ad Libitum Milk Using an Automated Feeding System

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There is little known about feeding motivation in group-housed calves fed with an automated feeding system. To examine the advantages and disadvantages of increased access to milk in an automatic feeding system, we fed calves either 4L milk replacer per day (d) or allowed ad libitum (ad lib) intake (n=20 per treatment).

Milk intake by ad libitum fed calves increased from 4.5L/d on d1 to 14-16L/d from d14 to d25 and then decreased to 12-14L/d until weaning on d45. Ad lib fed calves had 11-13 rewarded visits (i.e. when they consumed milk) to the milk feeder by d5, but this number decreased to 7-9 visits by the day of weaning. Ad lib calves made few (2 to 5 /d) unrewarded (i.e. no milk received) visits. By design, limit-fed calves had only 2 rewarded visits /d. However, these calves had 26 to 38 unrewarded visits/d between d7 and d21, and 13 to 22 unrewarded visits/d between d22 and d45.

Ad lib fed calves consumed virtually no concentrate before d21 and by d44 were consuming <50g/d. During the first 4d after weaning these calves consumed <500g/d. Restricted calves gradually increased concentrate intake such that they were consuming 1.6kg/d by d45, and consumed 2kg/d during the first 4 d after weaning.

Weight gains of restricted fed calves from d0 to d21 were higher (25.2kg) than for limit-fed calves (11.9kg). However, from d21 to weaning, limit-fed calves gained more than ad lib fed calves (24.1kg versus 19.1kg).

Implications: Ad lib access to milk improved weight gain and reduced unrewarded visits to the milk feeder until d21. However, ad lib access to milk reduced concentrate consumption and the advantages were less obvious after 3 wks of age.