
Transport of young veal calves: effects of pre-transport diet, transport duration and condition on clinical health, behaviour and antibiotic treatments

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The aim of this study was to investigate effects of different transport-related factors on performance of young calves upon arrival at the veal farm. An experiment was conducted with a $2 \times 2 \times 2$ factorial arrangement with 3 factors: 1) provision of rearing milk or electrolytes at the collection centre; 2) transport duration (6 or 18 hours) and 3) transport condition (open truck or conditioned truck). The study included Holstein-Friesian and cross-bred calves ($N = 368$; 18 ± 4 days; 45.3 ± 3.3 kg). Clinical health data were collected at the collection centre, and at the veal farm (the day after transport and week 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25 and 27 post-transport). Behaviour of calves was recorded during transport (by cameras) and at the veal farm, using scan sampling until 13 weeks post-transport. Use of antibiotics and other medicines was also recorded during the rearing period. The prevalence of mild diarrhea at the veal farm from day 1 until week 3 post-transport was higher in calves transported in the open truck compared to calves in the conditioned truck ($\Delta = 4.97\%$; $P = 0.04$). The incidence of mild diarrhea increased ($P < 0.01$), whereas navel inflammation decreased in the first three weeks post transport ($P < 0.01$). Upon arrival at the veal farm, calves spend more lying than standing, but there were no significant differences due to transport-related factors on lying and standing positions. Milk-fed calves tended to receive more antibiotic treatments than electrolyte-fed calves during the rearing period ($P = 0.06$). Overall, it seemed that transport conditions had an influence on the incidence of diarrhea in the first weeks at the veal farm and this may be related to differences in transport settings between the conditioned and the open truck. In addition, all transport-related factors did not affect behaviour of calves at the veal farm.