No reduction in growth performance and carcass quality of rose' veal calves with TMR feeding compared with concentrate feeding

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Introduction

• To obtain a premium payment for rose' veal meat in Denmark, the slaughter companies request:
  ▪ Carcass weight of 160 to 200 kg
  ▪ EUROP conformation above 3.2
  ▪ Calf age below 10 months
• The price difference between categories is large (2.05 € per kg carcass without premium vs. 2.85 € with premium), almost 160 € per calf.
• For ‘male EU premium’, a 185 kg carcass is required.
• To fulfill these limits a high growth rate is needed.
• The current feeding system is almost entirely based on ad libitum access to high-starch concentrate and barley straw.
• However, this feeding regime has some negative consequences for rumen function (acidosis) and for the development of liver abscesses.

Objective

To investigate two alternative feeding strategies to the traditional concentrate feeding:
• A TMR based on concentrate and maize silage
• Concentrate supplemented with artificially-dried hay

Materials and Methods

• Holstein Friesian bull calves (n=71)
• Calves purchased at 3-4 weeks (26±0.7 d) and 55±1 kg.
• Calves were fed skim milk-based replacer (800 g DM/d) and artificially-dried hay and weaned at 8-9 weeks of age.
• Daily gain (ADG) until weaning was 875±23 g/d.

Treatments:
1. TRAD-ditional: Concentrate
2. TMR: 80% concentrate and 20% maize silage (Net energy basis) until 200 kg LW and 65% : 35% above 200 kg LW
3. HAY: Concentrate and artificially-dried grass-clover hay

• All treatment groups had free access to barley straw.
• All diets were offered ad libitum.
• Protein content of concentrates was varied across treatments to assure similar total protein intake on all treatments.
• The maize silage was of high quality (7.17 MJ NE/kg DM)
• Animals were loose-housed on straw bedding.

Results

• Bull calves were slaughtered at 286±2 (mean±SEM) d of age.
• There were only 3 cases of liver abscesses.
• There were no significant differences between treatments in:
  ▪ Average daily gain (ADG) (1,306±13 g/d)
  ▪ LW at slaughter (376±1.5 kg)
  ▪ Carcass weight (194±1 kg)
  ▪ Dressing percentage (53.1±0.2 %)
  ▪ EUROP conformation (3.5±0.1)
  ▪ EUROP fatness (2.4±0.1)
  ▪ Meat/tallow colour (2.8±0.1)
  ▪ Slaughter house-paid premiums (78%, P>Χ²=0.66)
  ▪ Lightness (L* 40±0.5), redness (a* 19.0±0.4), and pigment content (3.7±0.1 mg/g) of M. longissimus

Conclusion

The 2 alternatives (‘TMR’ or ‘HAY’) to the traditional concentrate + straw feeding will not compromise high daily gain, carcass quality and premium payment.

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