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

M. Vestergaard[1], I. Fisker[2], C.F. Børsting[3] and N. Oksbjerg[1]
[1]Danish Institute of Agricultural Sciences, Tjele, [2]Danish Cattle Federation, Skejby,
[3]Danish Cattle Research Centre, Tjele, Denmark

Session C33.50, Poster 48, Abstract #258

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 fulfil 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

Housing conditions for bull calves

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.

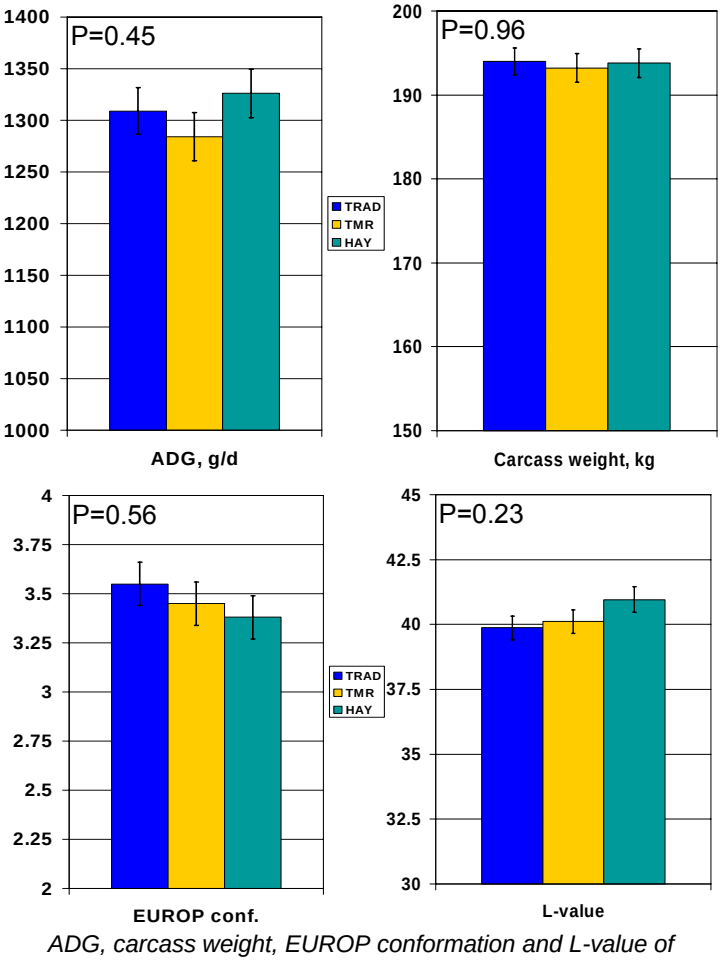
Treatments:

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%, $P>X^2=0.66$)
  - Lightness (L* 40±0.5), redness (a* 19.0±0.4), and pigment content (3.7±0.1 mg/g) of *M. longissimus*



ADG, carcass weight, EUROP conformation and L-value of M. longissimus in TRAD, TMR and HAY treatment groups (LS Means±SEM)

Conclusion

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

*Mogens Vestergaard, Danish Institute of Agricultural Sciences, Department of Animal Health, Welfare, and Nutrition, Box 50, DK-8830 Tjele, Denmark.
Phone: +45 8999 1507, fax: +45 8999 1166, email: mv@agrsci.dk