Environmental and economic consequences of feeding increased amounts of solid feed to veal calves

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Introduction

- Veal calves – traditionally mainly milk replacer (MR)

- Increasing amounts of solid feeds (SF)
  - Legislation (97/182/EG)
  - Price increase MR

- What type of solid feed?
- How much?

Introduction

- More SF needed in diet (Webb et al., 2013)
  - Coarse source
  - High fermentable fibre

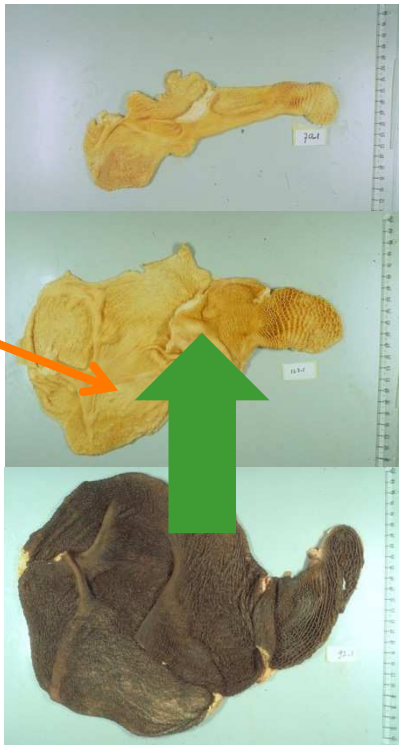
- SF used efficiently in combination with MR (Berends et al., 2012a)
- Increased utilization of SF with age (Berends et al., 2012b)
- Early rumen development important (Berends et al., 2012a)

- SF increases enteric methane emissions (Berends et al., 2012b)

Effect of more solid feed

Phd-theses Laura Webb and
Harma Berends

Abomasum



Objective

- Economic and environmental consequences?

Testing various feeding strategies

- 32 pens with 5 HF calves
- 2 x 4 experimental design
  - 2 SF mixtures
  - 4 levels of SF
  - equal carcass gain

Substitution rate

C80

1.42 (kg DM SF / kg DM MR)

C50

1.60

Economic consequences (€ / kg DM substituted MR)

	C80	C50
Milk replacer	-1.19	-1.19
Water heating	-0.04	-0.04
Concentrates	0.48	0.34
Corn silage	0.02	0.07
Straw	0.04	0.11
Net result	**-0.68**	**-0.71**

Save up to 60% on every kg MR substituted

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Environmental consequences - GHG (kg CO_2-eq. / kg DM substituted MR)

	C80	**C50**
Milk replacer	-1.40	-1.40
Water heating	-0.13	-0.13
Concentrates	1.07	0.76
Corn silage	0.03	0.07
Straw	0.00	0.00
Enteric fermentation*	0.42	0.62
Net result	**-0.01**	**-0.09**

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* MR 0.3%, C 3.0% and R 6.5% of GE

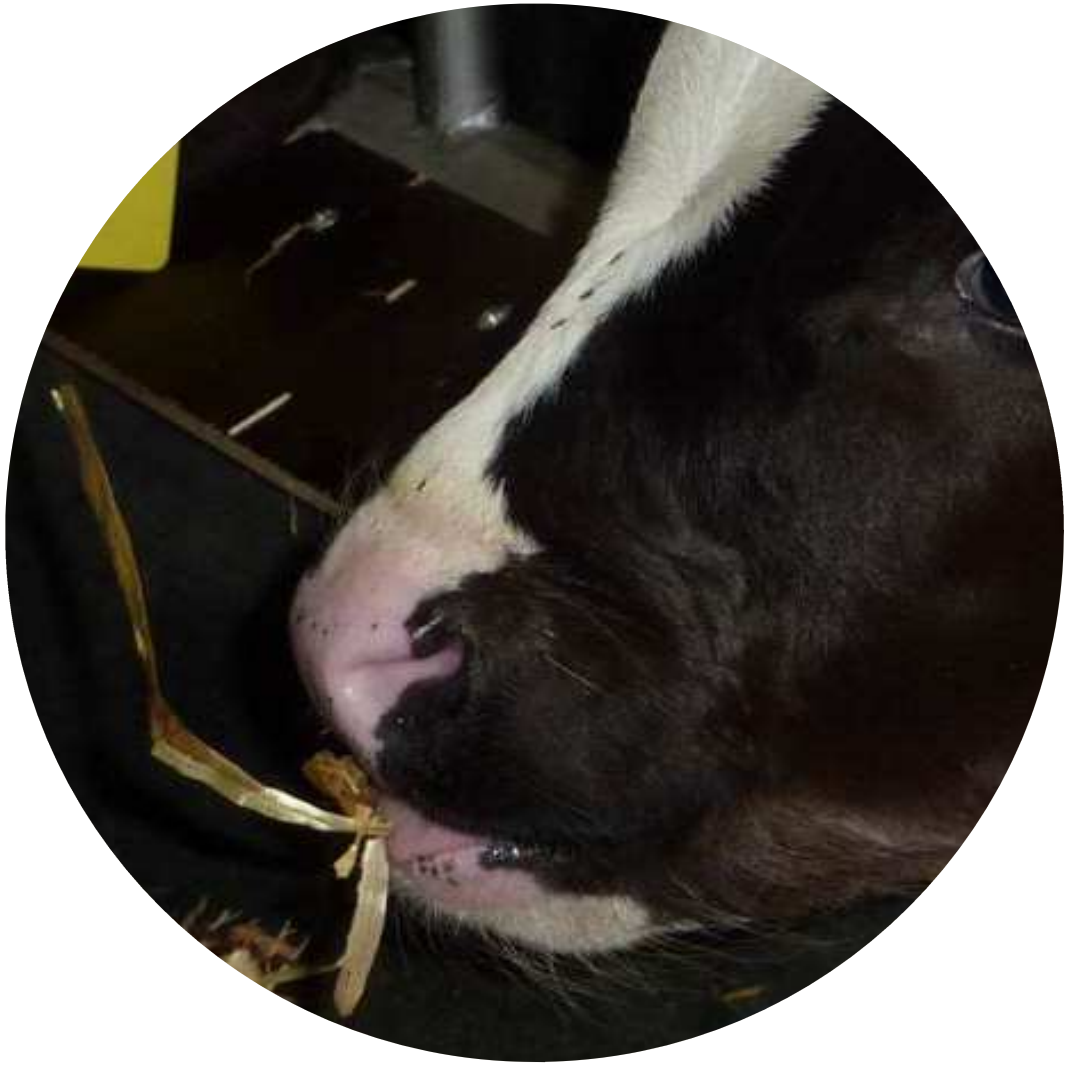
Environmental consequences - GHG (kg CO_2-eq. / kg DM substituted MR)

	C80	**C50**
Milk replacer	-1.40	-1.40
Water heating	-0.13	-0.13
Concentrates	1.07	0.76
Corn silage	0.03	0.07
Straw	0.00	0.00
Enteric fermentation	*0.21-0.65*	*0.30-0.72*
Net result	-0.23-0.21	-0.41-0.02

Conclusion

€€€ - good

GHG - neutral



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