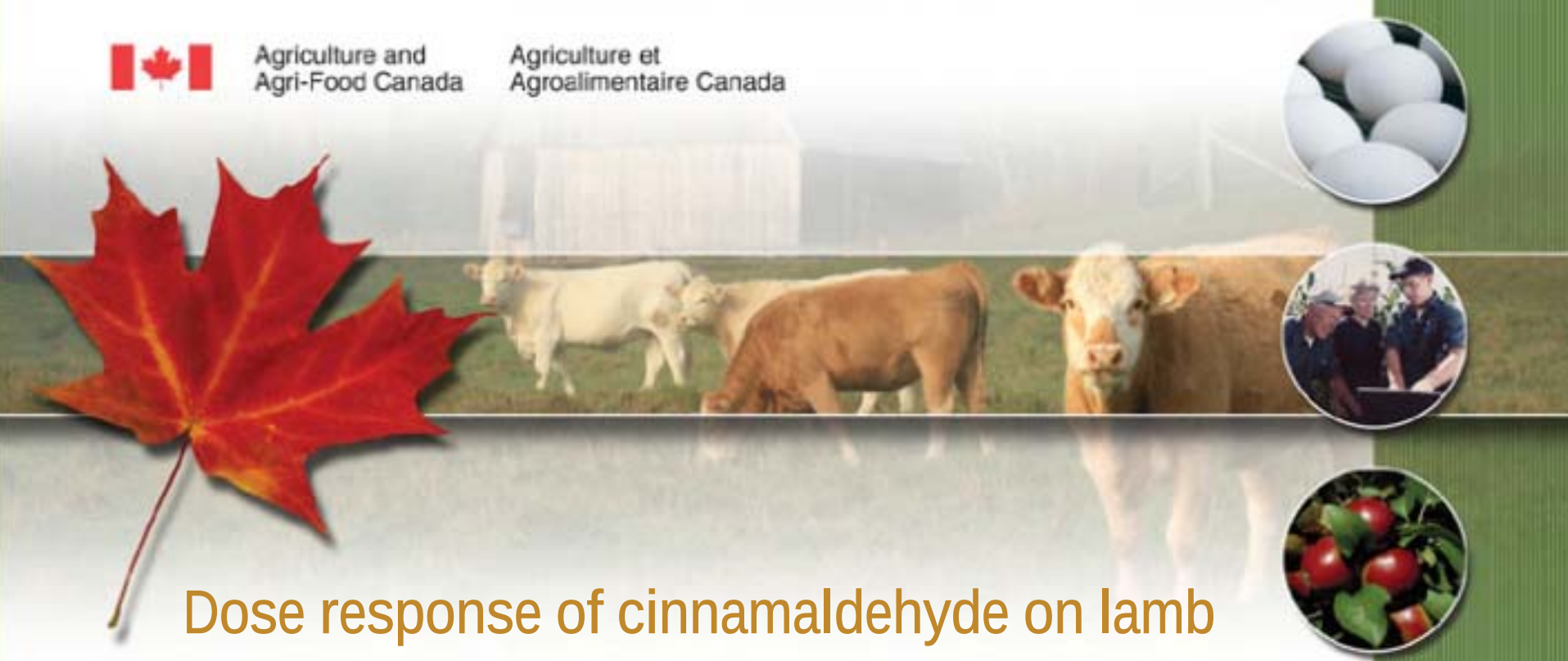


Agriculture and Agri-Food Canada | Agriculture et Agroalimentaire Canada

Dose response of cinnamaldehyde on lamb performance and carcass characteristics

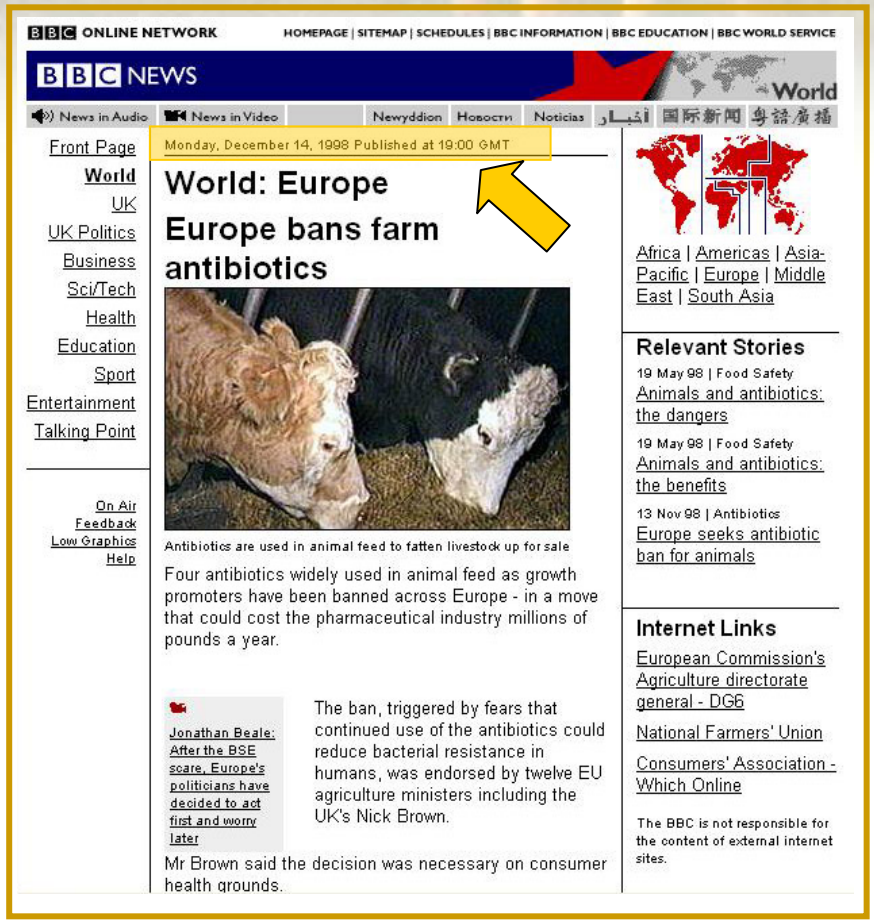
Alex Chaves et al.

•Free communications on Sheep and
•Goat Production 27-08-2007, 15.30 - 15.45
•Abstract # 509

Canada

Feed antibiotics vs. Europeans' demand

- Use of antibiotics are "banned" in EU in 2006
- Must address this change
- Are there alternatives?



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Monday, December 14, 1998 Published at 19:00 GMT

World: Europe

Europe bans farm antibiotics

Antibiotics are used in animal feed to fatten livestock up for sale

Four antibiotics widely used in animal feed as growth promoters have been banned across Europe - in a move that could cost the pharmaceutical industry millions of pounds a year.

Jonathan Beale: After the BSE scare, Europe's politicians have decided to act first and worry later

The ban, triggered by fears that continued use of the antibiotics could reduce bacterial resistance in humans, was endorsed by twelve EU agriculture ministers including the UK's Nick Brown.

Mr Brown said the decision was necessary on consumer health grounds.

Africa | Americas | Asia-Pacific | Europe | Middle East | South Asia

Relevant Stories

19 May 98 | Food Safety
Animals and antibiotics: the dangers

19 May 98 | Food Safety
Animals and antibiotics: the benefits

13 Nov 98 | Antibiotics
Europe seeks antibiotic ban for animals

Internet Links

European Commission's Agriculture directorate general - DG6

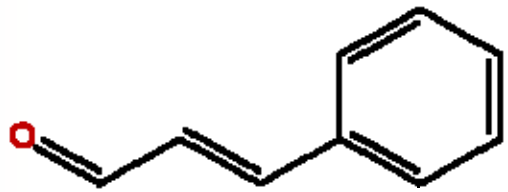
National Farmers' Union

Consumers' Association - Which Online

The BBC is not responsible for the content of external internet sites.

Plant extracts: “essential oils”

Cinnamaldehyde is the active ingredient in the spice cinnamon



Goals

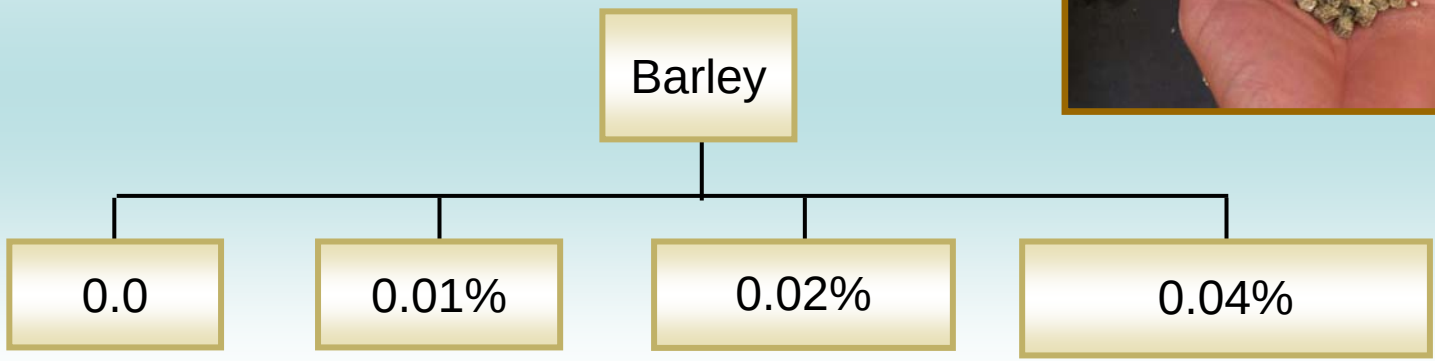
- Marketing our lambs for flavour meat without antibiotics

- So the question would be:
  - can plant extracts replace antibiotics / ionophores in lamb rations?

to promote animal growth

Trial design

- Completely random block design:



- 48 healthy ram lambs (20 ± 0.5 kg LW)
- Based on average lamb intake of 1500 g, these doses would equal receiving 0 (Control); 0.01% = 150 mg ; 0.02% = 300 mg; 0.04% = 600 mg CDH per lamb per day
- iso-nitrogenous and iso-energetic pelleted diets

DM and diets chemical composition

Dry matter (DM, g 100^{-1})	90.3
Crude protein	14.5
Non-fibre CHO	41.9
Lipid	3.8
Fibre (NDF)	30.4
Ash	9.4
ME (Mcal kg^{-1} DM)	1.9

Happy lamb environment

Measurements

- Intake was measured daily on an individual basis
- Lambs were weighed weekly and slaughtered ≈ 45 kg LW
- Liver and rumen were weighed at slaughter
- Rumen samples were taken at slaughter for NH_3, pH, VFA and DNA analysis (data not presented)
- Every 2 weeks: blood samples in all lambs: TRI, cholesterol, NEFA and BUN analyses

Measurements

- Saleable meat yield was determined by processing the lambs into primal cuts
- For each lamb, the two racks were vacuum packed and transported on ice to the Lacombe Research Centre for a taste panel evaluation (data not presented)

Results:

No differences in performance

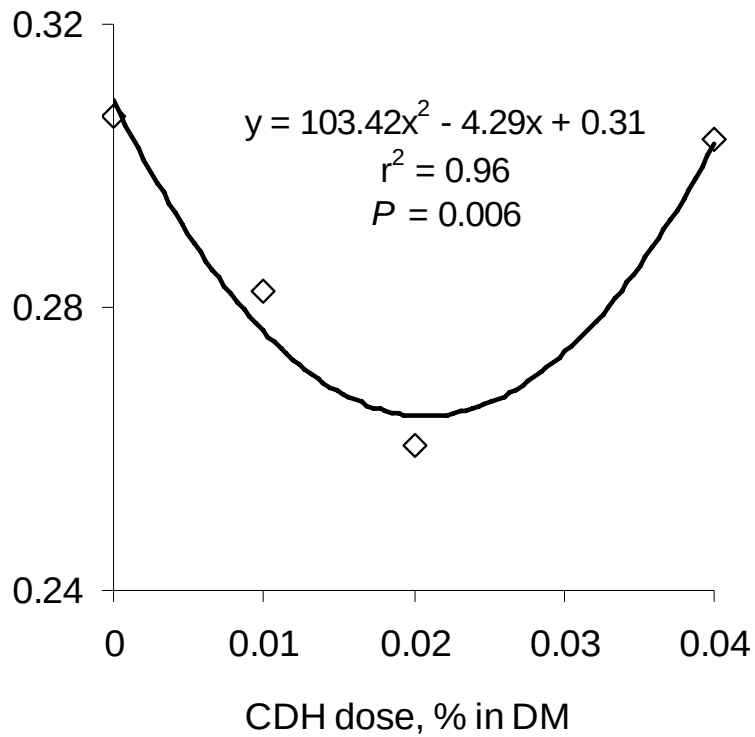
	Cinnamaldehyde				
	0 (control)	0.01%	0.02%	0.04%	L or Q
Initial LW, kg	20.2	20.5	19.5	21.5	ns
Final LW, kg	42.6	42.8	43.3	42.7	ns
ADG, g d^{-1}	234	234	250	229	ns
DMI, g d^{-1}	1019	1021	1053	1038	ns
FC, intake $gain^{-1}$	4.4	4.4	4.2	4.5	ns

Blood samples results

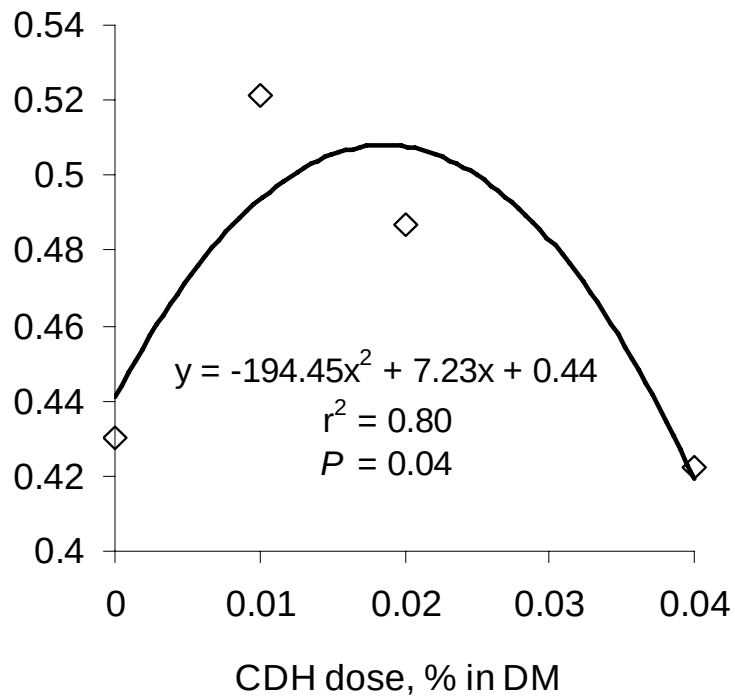
	Cinnamaldehyde (% DM)					P <				
	0	0.01	0.02	0.04	SE	Treat	Week	Treat x Week	L	Q
Blood urea N (BUN), g/L	0.31[a]	0.28[ab]	0.26[b]	0.30[a]	.013	0.05	0.13	ns	ns	0.01
Non-esterified fatty acids (NEFA), mEq/L	0.15	0.19	0.18	0.15	.018	ns	0.003	ns	ns	0.09
Cholesterol, g/L	0.43	0.52	0.49	0.42	.032	0.11	<.001	0.01	ns	0.04
Triglycerides, g/L	0.183	0.201	0.181	0.156	.014	ns	<.001	0003	0.08	ns

Q effect

Urea, g/L



Cholesterol, g/L



Saleable meat yield (SMY)

Cinnamaldehyde	SMY, kg	SE
0% (Control)	16.1	0.61
0.01%	16.0	0.64
0.02%	16.0	0.68
0.04%	16.2	0.61

Primal cuts, rumen pH, liver

- No differences in meat primal cuts ($P > 0.05$)
- Rumen pH was similar among treatments at the slaughter (mean = 6.67 $\pm$ 0.095; $P = 0.49$)
- Livers and rumen of control diets did not differ than cinnamaldehyde diets:
  - liver wt mean = 782 $\pm$ 28.9 g; $P > 0.66$
  - rumen wt mean = 4.8 $\pm$ 0.22 kg; $P > 0.12$

Conclusion

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