



TECHNICAL BULLETIN

Dairy Cows

EFFECT OF AGOLIN RUMINANT ON PERFORMANCE AND METHANE PRODUCTION IN DAIRY COWS

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PART OF A CLIMATE-KIC PROGRAM



INTRODUCTION

The effects on performance, fertility and environment in dairy cows were investigated, when AGOLIN RUMINANT, a mixture of plant extracts, was fed to the animals. The study was carried out at the University of Aberystwyth in Wales.



PROTOCOL

Early lactation Holstein-Friesian dairy cows, fed grass, whole crop wheat and corn silage TMR were housed in 2 pens: 76 animals in control group, 73 animals in experimental group (1 g AGOLIN RUMINANT / head / day). The trial ran for a total of 22 weeks at Trawscoed Research Farm, Aberystwyth, UK. Methane was measured with "Greenfeed system": 2 gas data loggers per group allowed an individual daily measurement, whilst in a herd situation and a conventional milking unit environment.



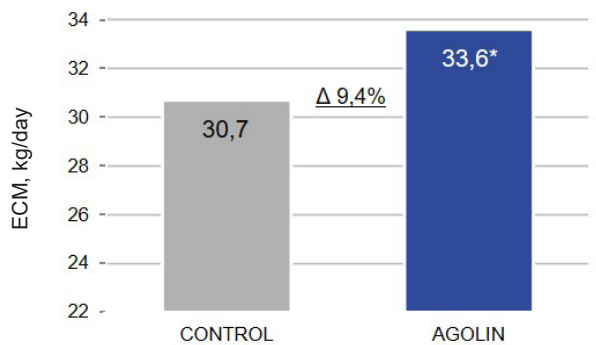
RESULTS

PRODUCTION PARAMETERS

	Control	Agolin	Diff., %
Dry matter intake, kg/day	23,3	24,1*	+3,4
Milk yield, kg/head/day	28,3	31,2*	+10,2
ECM, kg/head/day	30,7	33,6*	+9,4
Milk fat, kg/head/day	1,32	1,44*	+9,1
Milk protein, kg/head/day	0,96	1,05*	+9,4
Feed efficiency, kg milk/kg DMI	1,32	1,39	+5,3

*= p< 0,05

AVERAGE OF ENERGY CORRECTED MILK PRODUCTION OVER THE WHOLE TRIAL PERIOD



*= p< 0.05

Dry matter intake and milk production in the AGOLIN group were increased by 3.4% and 10.2% respectively. Accordingly the feed efficiency rate improved by 5.3%.

Most of the production parameters were increased, such as milk yield, total milk fat and protein. Milk solids per unit milk stayed unchanged.

PREGNANCY RATE AND INSEMINATION INDEX

In a number of long term trials with AGOLIN, the reproductive performance, another success factor of a herd, was also measured. Also in this experiment a positive influence on the pregnancy rate (+ 15%) was observed.

	Control	Agolin
Insemination, attempts/head	2,4	2,4
Pregnancy rate, %	60,5	69.9

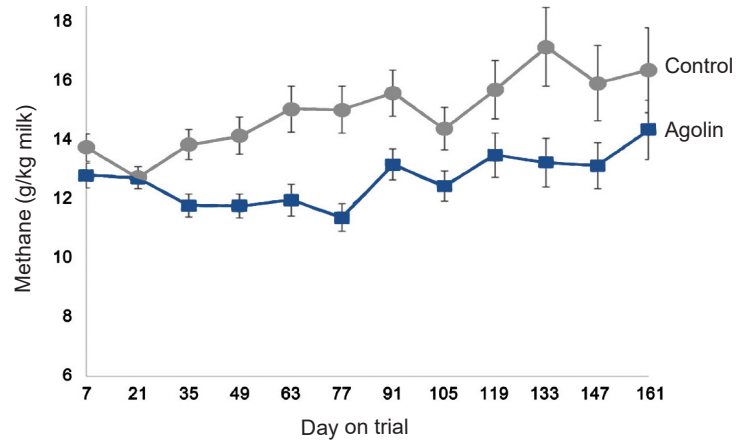
METHANE MITIGATION

The whole trial was organized to analyse the methane mitigating effect of AGOLIN RUMINANT in dairy cows using the "Greenfeed" measuring system.

The results over the whole trial period of 22 weeks demonstrated significant methane reduction per animal (-6,2%) and per kg milk (-19.8%).

As seen in all previous trials, the rumen needed an adaptation time of about 3 weeks before the benefit of AGOLIN could be seen. In addition, during the remaining period of the trial, no readaptation of AGOLIN's positive effects was detected.

METHANE EMISSIONS OVER THE WHOLE TRIAL PERIOD (22 weeks)



Average methane production was 20% less per kg of milk for cows fed with AGOLIN RUMINANT for the duration of the trial. This includes the initial 3 weeks adaptation time.

Significant methane reduction per animal

	Control	Agolin	Diff., %
Methane, g / head / day	438	411	-6,2*
Methane, g / kg milk	17,2	13,8	-19,8*
Methane, g / kg ECM	15,8	12,9	-18,4*
Methane, g / kg DMI	18,8	17,1	-9,0

*=p< 0.01



CONCLUSIONS

The trial clearly demonstrates that methane was reduced with AGOLIN RUMINANT in dairy cattle: CH₄ production was 6% less per cow per day and 20% less per kg of milk for cows fed with AGOLIN compared to control for the entire duration of this trial (22 weeks). Likewise, it appears that the energy saved through reduced methane output can be used for productive purposes, like milk production.

Milk yield increased by 10%

Feed efficiency improved by 5%

Methane production per kg milk decreased by 20%

Feed intake improved by 3%

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