

Biomin® *Trials*



Levabon® Rumen E

Efficacy of Levabon® Rumen E in the starter feed of weaning calves

Field trial, 2012

Commercial farm, Austria

Aim of the trial

The beneficial effects of yeast in ruminants have been known for over a century. Autolysed yeast (Levabon® Rumen E) is capable of improving rumen function and increases animal performance. The aim of the present trial was to investigate the effects of Levabon® Rumen E on the daily weight gain and feed intake of weaning calves.

Trial design

The trial was conducted on a cattle fattening farm (334 fattening places and 52 calf rearing places) in Lower Austria. The breed of the calves was either Simmental or Belgian Blue. Animals of both breeds were split up equally into two groups – control and treatment. The calves were housed in two group pens. The trial was conducted over eight weeks. During the trial, the supplementation group received 10 g Levabon® Rumen E/calf/day in addition to their diet (*Table 1*).

Table 1 - Experimental design

	Treatment	
	Control	Levabon® Rumen E
Number of animals	25	26
Average initial body weight (kg)	94.6	94.1
Trial duration (days)	56	56
Dosage (g/calf/day)	-	10

The calves were fed a calf milk replacer (CMR) in the first three weeks of the trial. Furthermore, the calves also received muesli, starter, hay and corn silage. The feeding program is shown in *Table 2*. The composition of the different feeds is shown in *Table 3*.

Table 2 - Feeding program

Week	1	2	3	4	5	6	7	8
CMR								
Muesli								
Starter								
Hay								
Corn silage								

Table 3 - Feed composition

	DM [%]	ME [MJ/kg DM]	CP [%]
CMR	90.0	14.0	18.0
Muesli	90.0	12.0	17.5
Starter	90.0	10.6	16.0
Hay	88.0	8.5	11.9
Corn silage	37.8	4.2	2.6

Animals were weighed on the 1st, 7th, 35th and last (56th) day of the experiment. Feed intake was recorded daily. No prophylactic medical treatment was applied.

Results and discussion

A) Performance parameters

As in *Figure 1* shown, the average daily weight gain was 160 g higher by supplementation of Levabon® Rumen E (mean=1.36, SE=0.018) compared to the control group (mean=1.20, SE=0.022; $P<0.001$).

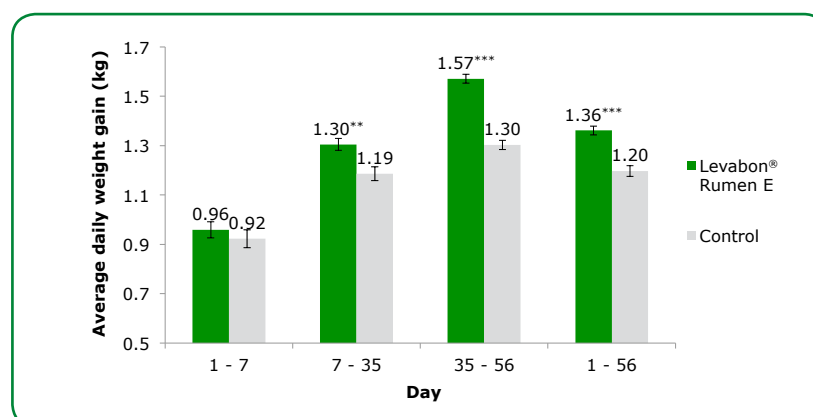


Figure 1. Effect of Levabon® Rumen E on average daily weight gain (Independent t-test; ** $P<0.01$, *** $P<0.001$)

Calves in the supplementation group gained 76.3 kg, whereas calves in the control group gained 67 kg. The body weight gained during the period was 9.3 kg higher in the Levabon® Rumen E supplemented group than in the control. There was a significant difference (mean= 170.4 kg, SE= 1.38).

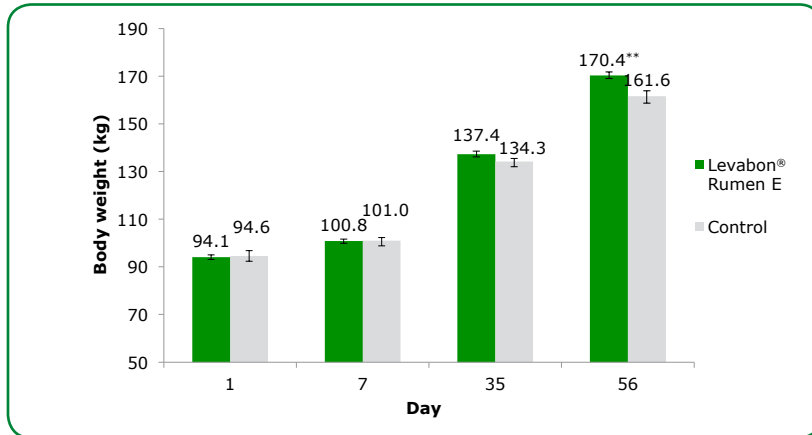


Figure 2. Effect of Levabon® Rumen E on average body weight (Independent t-test, **P<0.01)

In general, feed intake was slightly higher with Levabon® Rumen E supplementation (Figure 3).

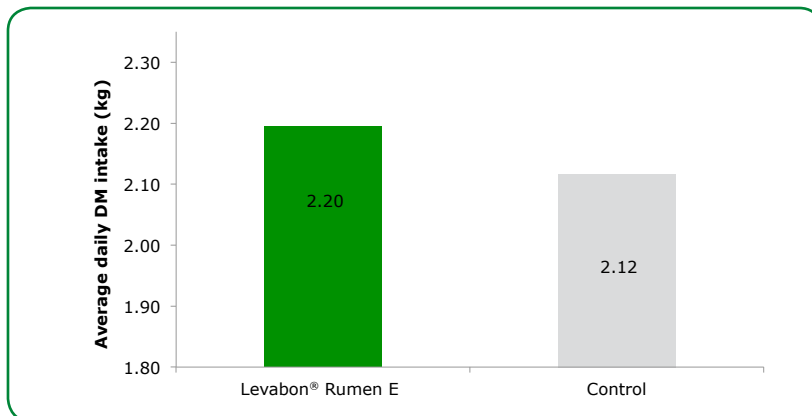


Figure 3. Effect of Levabon® Rumen E on average daily DM intake

Application of Levabon® Rumen E leads to better feed efficiency (Figure 4). Feed conversion ratio (FCR) improved from 1,77 in the control group, to 1.61 in the supplemented group.

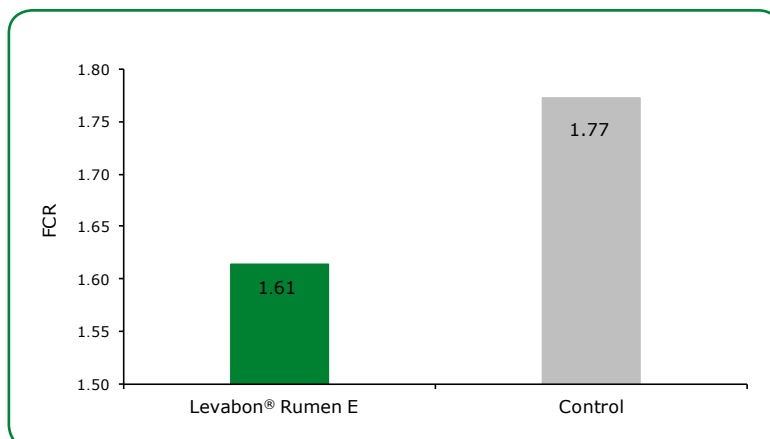


Figure 4. Effect of Levabon® Rumen E on FCR

B) Financial analysis

Table 4 - ROI calculation of application of Levabon® Rumen E

	Units	Levabon® Rumen E	Control
Ø weight at the end of the trial	(kg)	170.4	161.6
Ø DM intake	(kg/d)	2.2	2.12
feed costs	(€/kg)		0.48
medication costs	(€)		0.00
inclusion of Levabon®	(g/calf/d)	10	
price Levabon®		5.1	
additive costs	(€/calf)	2.86	
market price calves	(€/kg; 120 – 200 kg)		3,5
		596.4	565.6
revenue	(€/calf)	30.8	
Ausgaben	(€/calf)	62	56.98
increased expenses	(€/calf)	5.02	
profit	(€/calf)	25.78	
ROI	(profit(calf)/additive costs (calf))	9.03 : 1	

Conclusion

Calves receiving diets supplemented with Levabon® Rumen E had superior average daily weight gain. Overall, calves fed Levabon® Rumen E showed a better growth performance (+9.3 kg after 56 days in the supplementation group compared to the control group; $P < 0.01$) and utilized their feed more efficiently than calves receiving no supplementation. Due to the growth promoting effects on cellulolytic bacteria in the rumen, application of autolysed yeast Levabon® Rumen E enhances the overall development of calves.

> IMPRESSUM

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 Erber Campus 1, 3131 Getzersdorf, Austria, Tel: +43 2782 803-0, e-Mail: office@biomin.net, www.biomin.net

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