



# Effect of GluKosa on health and production of suckler cows

The aim of this trial was to evaluate the effect of GluKosa as glucose precursor on performance and blood parameters of suckler cows at second half of lactation and the effect on calves growing

Glucose precursors in transition period has a positive effect on metabolism of dairy cows, increasing production and health.

### Method and Material

- 18 multiparous cows (with calve)
- Postpartum days at the beginning of trial : 48 days
- Calves feeding just by suckler cow milk
- Suckler cow diet: 9 kg alfalfa hay and 1 kg triticale meal.

### Treatments and periods:

**Control group** from 48 to 72 days after calving

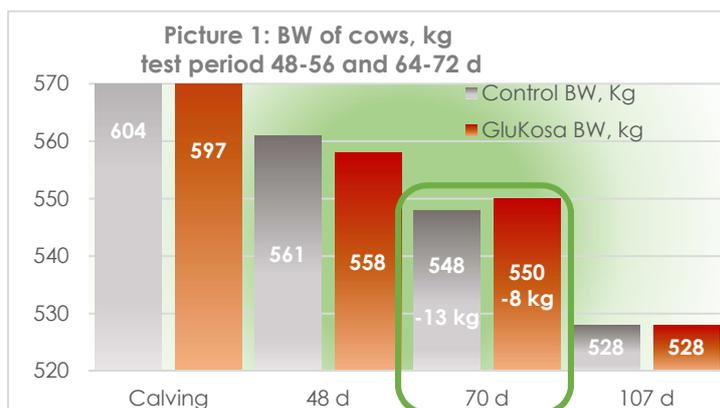
**GluKosa group** supplemented at 366 g/cow/day

1° period (8 d): from 48-56 d GluKosa after calving

Not supplemented period (7 d) from 57-63 d

2° period (9 d): from 64-72 d GluKosa after calving

### Weight and Body Condition results in cows:



Body condition score (BCS) at calving was similar for both groups; before test (48 d) Control increases (+0.14). During supplementation period it was not differences (-0.15), but after trial Control down more (-0.19) than cows fed GluKosa (-0.04), reaching similar BCS at the end (Table 2).

### Body weight and daily weight gain of calves:

From calving, calves of GluKosa had a better weight (+4 kg), which continued during all trial period. In fact during supplementation period, daily weight gain in calves of GluKosa showed higher increment DWG (+7.9 and 7.7% vs Control). After supplementation (72-107 d) the DWG of GluKosa group decrease vs Control, but final weight of GluKosa calves was +6.4 kg higher than Control (Picture 3).

**Table 1: Chronogram of test periods and data collection**

Calving BW, BCS, blood sample  
BW calves

**48 d beginning of 1<sup>st</sup> trial period**

BW, BCS, blood sample

55 d Blood sample

**56 d 8<sup>th</sup> day finish 1<sup>st</sup> treatment**

57 d Blood sample

58 d BW calves

61 d Blood sample

**64 d beginning of 2<sup>nd</sup> trial period**

BW, blood sample

70 d BW, BCS, blood sample

**72 d 8<sup>th</sup> day finish 2<sup>nd</sup> treatment**

Blood sample, BW calves

107 d BW, BCS, BW calves

BW (body weigh); BCS (body condition score)

Blood sample (analysis insulin, glucose, NEFA and BHB)

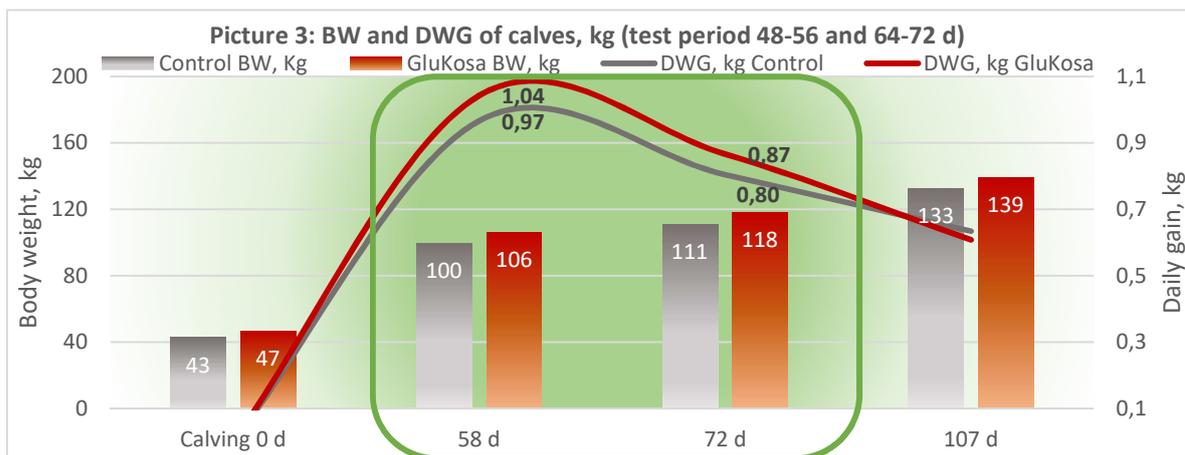
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The main loss of body weight (Picture 1) was from calving to the beginning of the trial, where Control group was heavier than GluKosa group. However, from the supplementation with GluKosa (48 d), the results were reversed and cows fed with GluKosa had better body weight than Control (-8 kg vs -13 kg).

**Table 2: Body Condition Score (variation) from calving to the end of the trial**

BCS	CONTROL	GLUKOSA
<b>BCS calving</b>	2.86	2.84
<b>BCS 48 d</b>	3.00 (+0.14)	2.83 (-0.01)
<b>BCS 70 d</b>	2.85 (-0.15)	2.68 (-0.15)
<b>BCS 107 d</b>	2.66 (-0.19)	2.65 (-0.04)

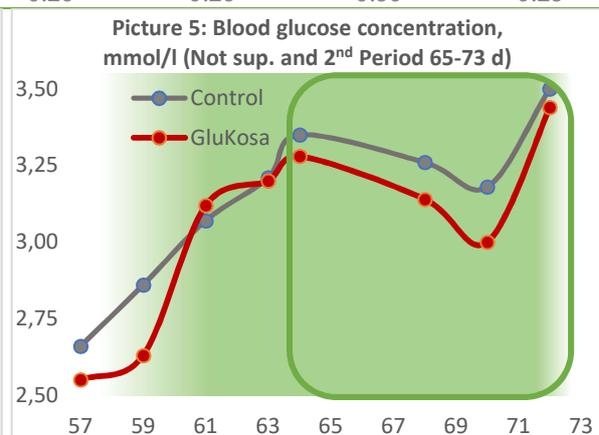
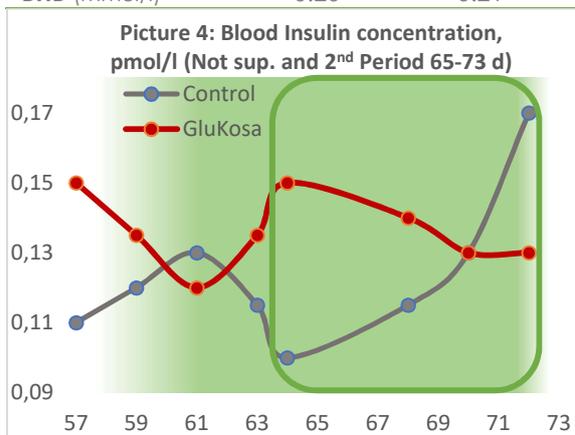


### Blood parameters in suckling cows:

Insulin and glucose levels in blood, in the first period didn't show differences (Table 3). However, from 61 days insulin increased and therefore glucose level decrease in cows fed with GluKosa, showing better metabolism absorption (Pictures 4 and 5).

**Table 3. Effect of treatment on insulinn, glucose, AGNE and BHB by period**

	1 <sup>st</sup> Period 48-56 d		Not sup. 57-63 d		2 <sup>nd</sup> Period 64-72 d	
	Control	GLUKOSA	Control	GLUKOSA	Control	GLUKOSA
<b>Insulin</b> (pmol/l)	0.123	0.125	0.119	<b>0.135</b>	0.129	<b>0.138</b>
<b>Glucose</b> (mmol/l)	3.03	3.00	2.95	2.88	3.32	3.22
<b>NEFA</b> (mmol/l)	0.16	0.25	<b>0.44</b>	<b>0.50</b>	<b>0.50</b>	<b>0.54</b>
<b>BHB</b> (mmol/l)	0.20	0.21	0.26	0.26	0.30	0.25



NEFA values in first period were lower than limit of 0.3 mmol/l (subclinical ketosis-SCK), from 57 days values didn't show differences between groups. The increase over limit reach in GluKosa is relate with the increase of milk production. BHB blood level was lower than 1.1 mmol/l (SCK) with similar results for both groups, except at 2<sup>nd</sup> period where Control showed a slightly increase vs GluKosa (Table 3)

**Conclusion:** The inclusion effect of **GluKosa** in suckling cows showed better results in postpartum performance, **improving body weight, BCS and increasing the growing of calves** by milk production increase.

**GluKosa:** optimal combination of glucose precursors for dairy cows, improver of negative energy balance and preventer of SCK incidence at the beginning of lactation, showed also the **benefit on energy metabolism of body fat mobilization, and milk production** increase without compromise the body condition and blood parameters in suckling cows.