



# Glycoline

The power line to performance

Metabolic stress management



Improves performances

Stimulates intake

Reduces metabolic stress



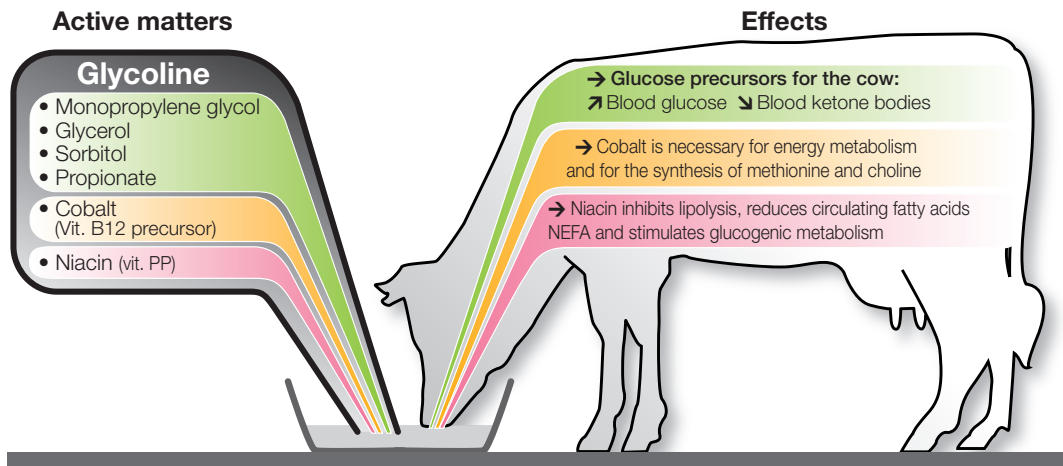
VITALAC  
NUTRITION ANIMALE



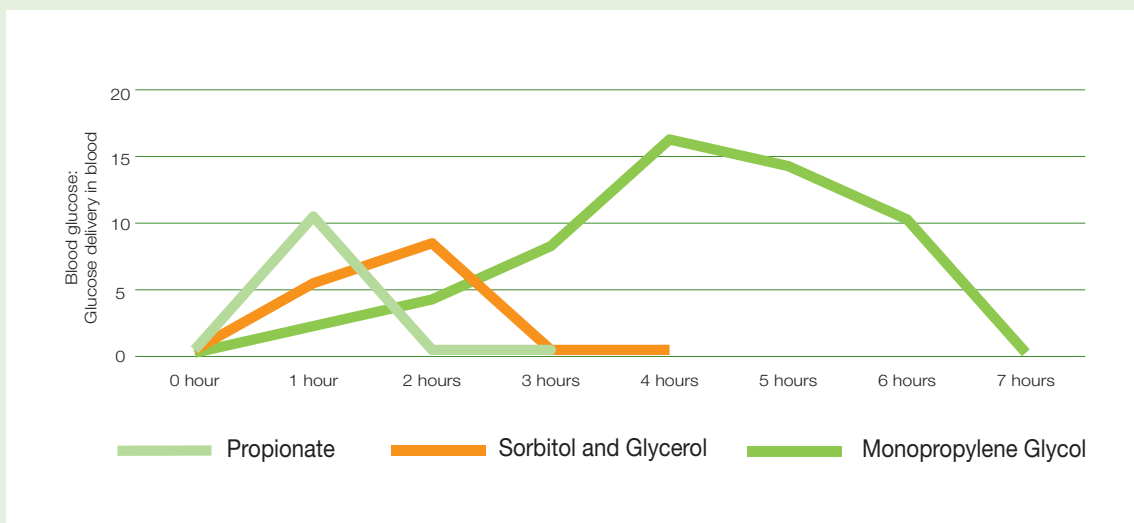
# Glycoline

The power line to performance

A mix of glucose precursors and neoglucogenesis catalyzers



Synergy and kinetics of the 4 glucogenic agents



Source: Department of Animal Health, Welfare and Nutrition, Faculty of Agricultural Sciences, University of Aarhus, DK-8830 Tjele, Denmark

PALATABILITY APPROVED





# Glucose

## An essential nutrient

### Glucose is essential for the milk production

- > The only precursor for lactose synthesis in the udder
- > The udder glucose uptake determines milk yield
- > Increase in blood glucose = increase in milk production

Trial result, Iran - Glycoline fed 300gr/day from 20 days prepartum to 30 days post partum			
	BHBA (mmol/L)	Glucose (mg/dL)	Production first 60 DIM (kg/cow)
Control pen	0,625	48	35
Glycoline pen	0,513	52	38

Source: A. Samiei, PhD, 2010

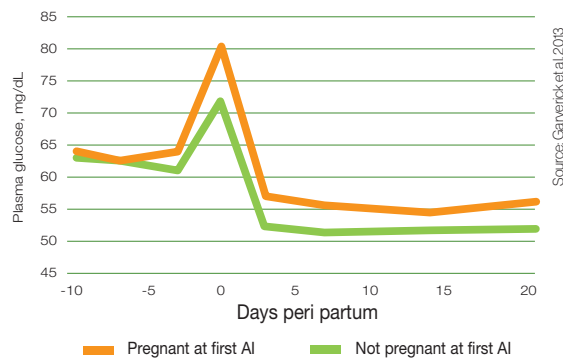
**3kg/**Glucose  
day

Body daily demand  
for a cow producing 40L  
Overton, 1998

### Glucose is essential to a good fertility

- > Necessary for follicle recruitment & growth
- > Required for a quick uterine involution

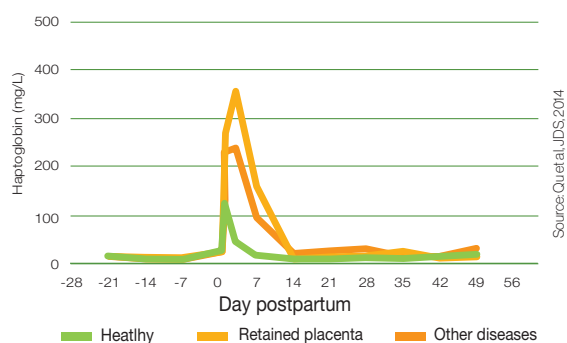
PERIPARTUM SERUM GLUCOSE OF COWS EITHER PREGNANT OR NOT PREGNANT AFTER 1ST AI



### Glucose is essential for the efficiency of the immune system

- > Activated leucocytes consume up to 2kg of glucose per day!
- > Systemic inflammation increases around calving (stress, LPS challenges)

HAPTOGLOBIN (SIGNAL OF INFLAMMATION) IN BLOOD AROUND CALVING



**2kg/**Glucose  
day

Consumed by immune  
system once activated  
Kvidera et al, 2017

## Every stress increases glucose consumption by the body

- > Transition period & calving stress
- > Heat stress
- > Social stress
- > Transportation stress
- > Weaning stress



Cows very quickly suffer from rising ambient temperatures.

## Ketosis, still a current issue:

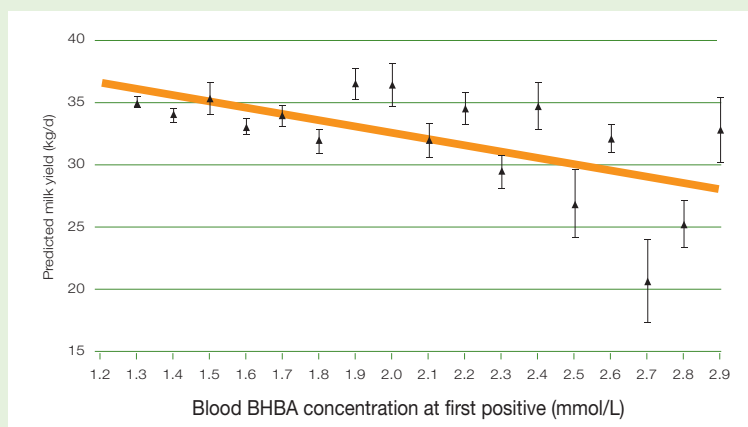
43% of cows between 3 to 16 DIM are positive for BHBA (McArt 2015)

Effects of ketosis :

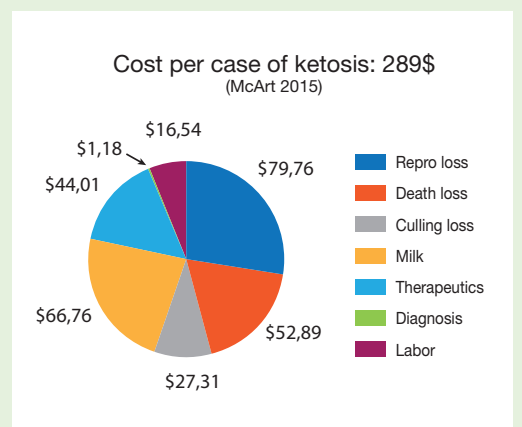
- > If SCK between 3 and 7 days:
    - 6.1 times more LDA
    - 4.5 times more culling
    - 2.2kg less milk in 1st 30 DIM
  - > Every 0.1mmol/L BHBA ↗ - 0.5 kg milk in 30 DIM
- Cost of subclinical ketosis (McArt et al, 2015): 289 €



Subclinical Ketosis is prejudicial for reproduction performances.



Source: McArt et al, 2012





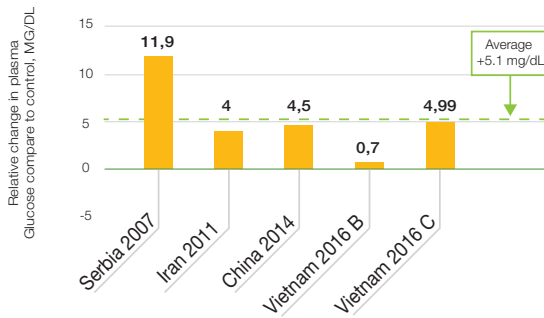
# Glycoline

## Trial results

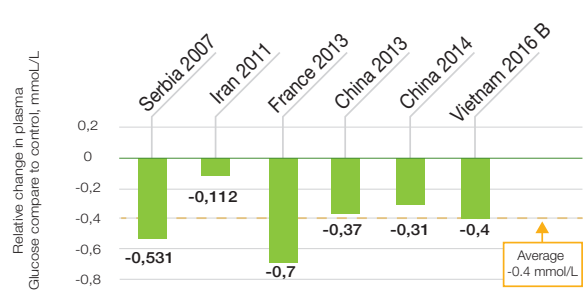
Obtained in commercial dairies worldwide from 2005 to 2016

### Glycoline increases plasma glucose and decreases plasma BHBA

EFFECT OF GLYCOLINE ON PLASMA GLUCOSE

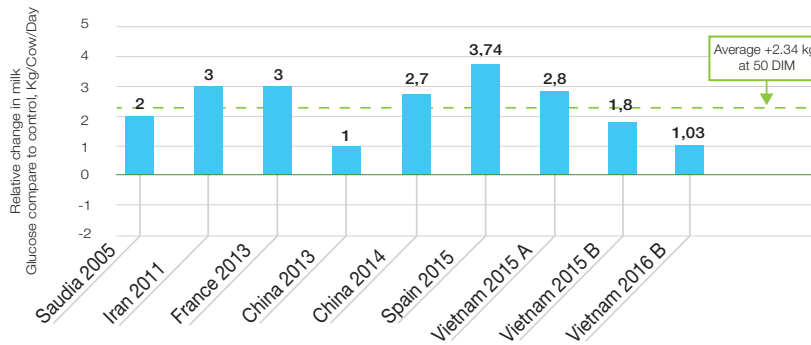


EFFECT OF GLYCOLINE ON PLASMA BHBA



### Glycoline improves production

EFFECT OF GLYCOLINE ON MILK YIELD



### Glycoline improves performances during heat stress

Field results in France in heat stress conditions (THI between 75 and 85 day & night) - addition of 200ml of liquid Glycoline in July & August 2018 in the TMR

EFFECTS OF ADDING GLYCOLINE IN THE TMR AGAINST HEAT STRESS





# Glycoline

— The power line to performance —



## In transition period



Protocol	Weeks									
	-3	-2	-1	Calving	+1	+2	+3	4	to	AI
<b>Liquid</b> 33, 237 and 1120kg drums									200 to 300 mL/d	100 to 200 mL/d
<b>Powder</b> 25kg bags									300 to 500 g/d	250 to 300 g/d
<b>Pellets</b> 25kg bags									350 to 600 g/d	300 to 350 g/d

Ways of feeding:

- > Mixed in the TMR, or by top feeding, for fresh and close up groups
- > In automatic milking system or automatic feeder
- > In drinking water by using a dosing pump

GLYCOLINE can also be used:

- **Mixed in a drench solution:** 500ml/cow
- **For ketosis** (clinical and subclinical) **treatment:** 400ml/cow/day during 5 days

PALATABILITY APPROVED



## Against heat stress

150 to 200ml/cow/day for all lactating cows when THI > 70:

- > By top feeding on the TMR: for the best effect on intake
- > Or mixed in the TMR

## Others situations

GLYCOLINE for goats and ewes: pregnancy toxemia & ketosis prevention

- 1 month before kidding: 30ml or 50gr
- 1 month after kidding: 50ml or 70gr

GLYCOLINE for other situations of stress: ask your VITALAC representative

For beef fattening : at arrival and before slaughtering : 40 ml/ 100 kg live weight

## Glycoline line

- **GLYCOLINE SWEET:** for dairies looking for more palatability
- **GLYCOLINE "GREEN":** with MPG of vegetal origin
- **GLYCANION:** for a proper prevention of both hypocalcemia and energy deficit in close up period
- **NATOLINE:** energy booster whitout propylene glycol/Propyguard et Propyguard green : The best value for money

France - Brittany  
Tel: +33 (0)2 96 21 52 78

[www.vitalac.eu](http://www.vitalac.eu)

  
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