Levucell® SC
Rumen Specific Yeast

Levucell®SC improves feed efficiency of Dairy Cows in severe heat stress conditions

(University of Florida, 2010)

CONTEXT

Severe heat stress can cause large financial losses of up to 422 € /cow (*St Pierre et al.,* 2003). An estimated 80% of these losses are associated with loss of productivity, and 20% with health issues. A large part of these reduced performances can be due to rumen acidosis problems. Slug feeding, lower levels of forage intake and higher levels of fermentable carbohydrates can cause an increase in rumen fermentation acids (lowering rumen pH) and a decrease in microbial protein production.

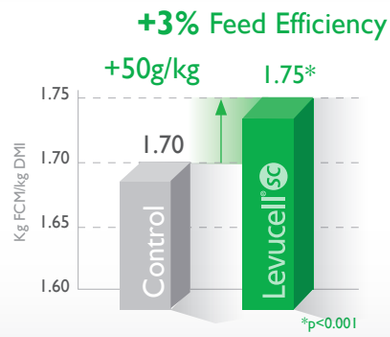
OBJECTIVE

To evaluate the impact of Levucell®SC on feed efficiency and rumen condition of high producing dairy cows in severe heat stress conditions.

REMINDER

Meta-analysis on Feed Efficiency

In standard conditions (non stressfull), across multiple experiments (14 trials, 1 600 dairy cows), Levucell®SC (10 billion CFU*/cow/d) significantly improved Feed Efficiency (+3% in FCM*/DMI*).



De Ondarza et al., 2010
The Professional Animal Scientist 26: 661–666
*CFU : Colony Forming Unit - *FCM : Fat Corrected Milk
*DMI : Dry Matter Intake

MATERIAL AND METHODS

LOCATION Department of Animal Sciences, University of Florida – Gainesville, USA

PERIOD May to September 2009

ANIMALS 60 dairy Cows in heat stress conditions (THI : 80), (n=60)

DIETS Corn silage (41.1%), Alfalfa hay (10.4%)
Brewer's grains wet (5.2%) and Grain mix (43.0%)

	Mean Value of Diet
NDF	30%
CP	16,6%
Starch	26%

TREATMENTS 1/ Control
2/ Levucell®SC 20: 10 billion CFU/cow/d (standard rate: equivalent to 0.5g/cow/day)
3/ Levucell®SC 20: 20 billion CFU/cow/d (specific stress conditions rate: equivalent to 1g/cow/day)

It is a common practice for several feed additives with biological activity to increase levels of supplementation during heat stress because of lower dry matter intake and higher metabolic requirements. The aim of this study is to measure dose effect of Levucell®SC under extreme stress conditions.

J. Anim. Sci. Vol. 88, E-Suppl. 2/J. Dairy Sci. Vol. 93, E-Suppl. 1

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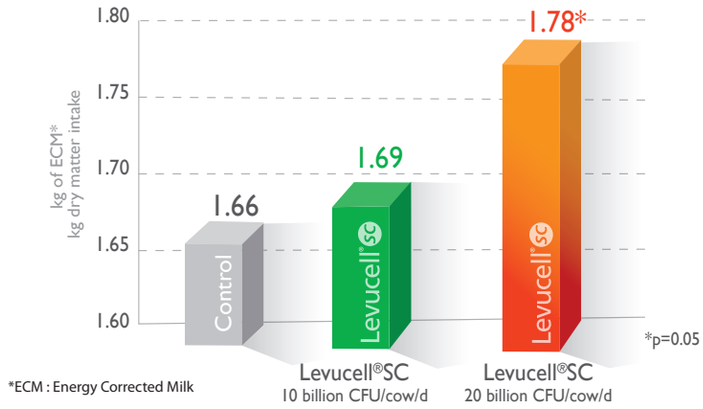
LEVUCELL®SC SIGNIFICANTLY INCREASES FEED EFFICIENCY (+7%)

+7%* of feed efficiency +120g/kg DMI p<0.05



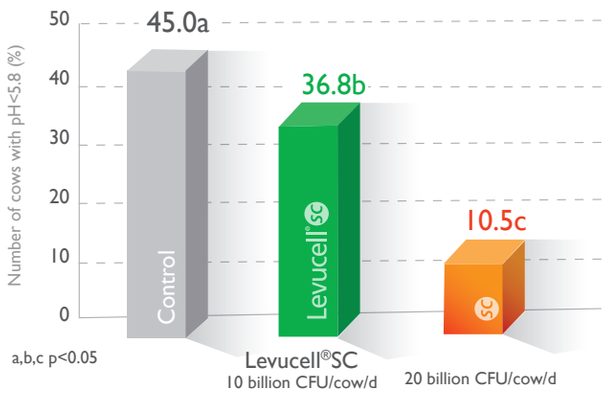
*ECM : Energy Corrected Milk

In this study conducted in extreme stress conditions (Temperature Humidity Index=80), providing Levucell®SC at 0.5g/cow/day increased feed efficiency (**+2%** ECM*/DMI); this result is close to data from meta-analysis *(De Ondarza and Sniffen, 2010)*.

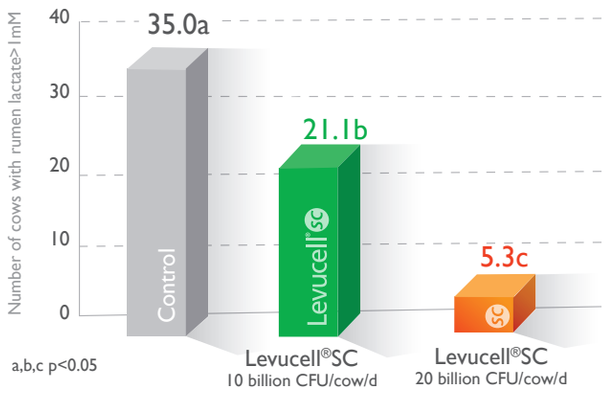
Levucell®SC increases income over feed cost with high return on investment 6:1

UNDER HEAT STRESS CONDITIONS, LEVUCELL®SC IMPROVES RUMEN FUNCTION AND STABILITY

Reduced % of cows with pH<5.8



Lower % of cows with rumen lactate higher than 1mM



Many of the problems associated with heat stress can affect rumen function. Published research studies have shown that Levucell®SC can be an effective tool in minimizing these challenges.

In this study conducted at the University of Florida, during the summertime, cows fed Levucell®SC demonstrated **higher rumen pH and lower rumen lactic acid levels** (one of the causes of acidosis) compared to cows fed with a control diet.

Under higher stress conditions,
feeding a higher rate of Levucell®SC,
increased feed efficiency
to an even greater degree
+7% ,+120g ECM/kg DMI

	Control	Levucell®SC
Feed Efficiency	**1,66**	**1,78**
Turnover (€/cow/d)*	10,44 €	10,90 €
Feed cost (€/cow/d)**	3,55 €	3,57 €
IOFC (€/cow/d)	6,89 €	7,35€
Net profit		**+0,46 € / hd/d**

*with a milk price of 300€/1000kg **with a feed cost of 0,17€/kg and the cost of Levucell®SC of 0,10€/hd/d

LSC-HEATSTRESS-DC-FLORIDA-2010-ENG - € EU approved (E1711/4b1711/4a1711) for use in bovine destined for meat and milk production, dairy goats and ewes and horses

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