



## ACTISAF INCREASES FEED EFFICIENCY BY 5.5% IN HIGH-PERFORMING EARLY LACTATION COWS

Feed and forage costs make up the largest single cost of milk production, therefore controlling these expenses is essential to the profitability of any dairy business in the UK and Ireland. In order to minimise feed costs per litre or kg of milk solids produced, optimising feed efficiency of the herd is critical.

A study performed at the University of Nottingham’s Centre for Dairy Science Innovation (CDSI) has found that 10g per day of Actisaf increased energy-corrected milk yield by 2.8 kg/day, or 5.5%. This improvement came with no effect on dry matter intakes (DMI) or detrimental effects on fertility, body condition score or cow health - powerful evidence of Actisaf’s role in improving the feed efficiency of dairy cows.

“Multiple factors contribute to increasing milk yield within herds. Typically, improvements in forage quality, higher concentrate feeding levels, precise balancing of diets, increases in DMI and improvements in environmental and welfare conditions result in more milk solids in the bulk tank,” explained James Ambrose, Commercial and Technical Manager for Phileo by Lesaffre UK and Ireland.

“However, what these results tell us is that Actisaf is increasing milk yields through improved digestibility of fibre, unlocking more energy from the same amount of feed without jeopardising fertility or cow health. The potential impact of this new data on dairy farming businesses is really exciting.”

	Control	Actisaf	Diff.	p-Value
Milk yield, kg/d	47.5	50.1	+2.6	0.033
Energy-Corrected Milk, kg/d	47.7	50.5	+2.8	0.009
Fat-Corrected Milk, kg/d	46.3	49.2	+2.9	0.008
Fat, g/d	1823	1945	+122	0.022
Protein, g/d	1521	1593	+72	0.06
Lactose, g/d	2236	2342	+106	0.066

“Here we were able to get 2.8kg of energy corrected milk more from a cow after feeding only 10g of product. These results show that Actisaf is doing exactly what it says it does – improving the digestibility of the diet and releasing more energy from feed for increased milk production.”

Phil Garnsworthy, Professor of Dairy Science, University of Nottingham

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Phil Garnsworthy, Professor of Dairy Science at the University of Nottingham, oversaw the trial and explained the importance of feed efficiency: “As feed comprises 50-70% of costs on a dairy farm, anything you can do to minimise that expense without sacrificing yield is good for profitability and sustainability” he said.

“Dairy cows are great at converting grass, which typically grows on land that is unsuitable for other crops, into a highly nutritious food. Improving the cow’s efficiency in doing so not only has implications for a farmer’s bottom line, but also for wider issues like the impact of farming on the environment and land utilisation.”

### Trial Design

The trial was run using the Centre’s high performing Holstein-Friesian herd that averaged 12,500 litres per cow per year prior to the trial, approximately 1.5 times more milk than the UK national average. Cows were housed in the Centre’s state-of-the-art facilities, which include sand bedded cubicles, automated PMR feeding, brushes and robotic milkers.

The trial was a continuous design with two treatments applied to 25 cows per treatment from 7 days after calving until 128 days in milk. Cows were paired pre-calving according to parity, predicted milk yield and live weight, then randomly allocated to either the control group or treatment group.

Throughout the trial, both groups were fed their normal diet of ad lib partial mixed ration (PMR) and concentrate fed through the robot at the rate of 0.45 kg/litre above 30 litres/day milk yield. The PMR contained grass silage, maize silage, whole-crop silage, a soya:rape blend, molasses, protected fat and minerals.

The treatment group was fed 10 g/day of Actisaf in the PMR, with the control group receiving a placebo.

### Results and Implications

The results of the study showed that Actisaf significantly increased the yield of energy corrected milk with no associated lift in DMI, thereby significantly improving feed conversion efficiency by 5.5% on average. This improvement in performance had no negative effects on body condition score, health, methane emissions or fertility, and ultimately resulted in a 5.5% reduction in carbon emissions per kg of energy corrected milk.

As DMI was not affected, the increase in milk yield can be attributed to increased digestibility, which in turn would effectively increase metabolisable energy (ME) supply to cows. Additionally, the ability to increase milk production from forage through increased NDF digestibility demonstrates the role Actisaf has to play in helping cows reach their genetic potential, improving profitability and reducing the environmental impact of milk production.

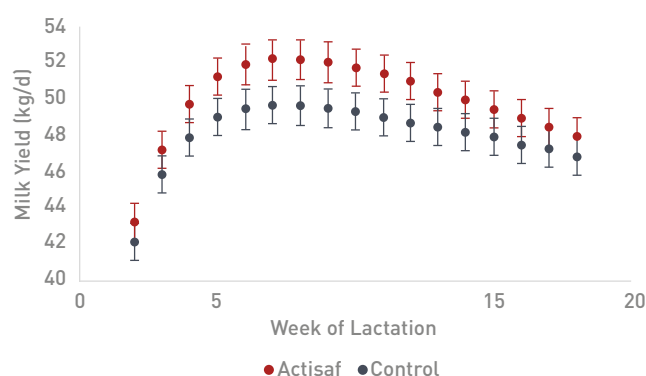
James summarised how Actisaf was able to achieve this. “When feeding dairy cows and other ruminants, it is important to remember that we are actually feeding the rumen microbes that break food down and convert it into a utilisable energy and protein source for the cow.”

“Actisaf’s primary function is to stimulate the growth of rumen bacteria that digest fibre, thereby releasing more energy from forage. Simultaneously, it is also encouraging the growth of bacteria that regulate rumen pH and minimise the build-up of lactic acid in the rumen, which causes acidosis or serious digestive upset if left to accumulate.

Digestibility	Control	Actisaf	p-Value
Dry matter	0.773	0.798	0.034
NDF	0.665	0.706	0.020
Nitrogen	0.759	0.786	0.052

(kg/day)	Control	Actisaf	p-Value
DMI	23.9	24.0	0.929
PMR intake	17.1	17.1	0.938
Concentrate intake	6.8	6.9	0.745

	Control	Actisaf	p-Value
BHOB, mmol/l	0.79	0.84	0.389
NEFA, mmol/l	0.22	0.21	0.873



“This later group of bacteria convert lactic acid into propionic acid, a major source of glucose that is needed for the production of lactose, a key determinant of milk yield.”

In doing so, Actisaf increases milk solids and liquid yields, reduces incidences of acidosis and reduces the variability in performance associated with dietary changes, all benefits that are supported by a large library of peer reviewed trial work.

“This research backs up results we have seen on farm and getting the same outcome in a robust piece of scientific work is significant. Because of Actisaf’s ability to improve feed conversion, we believe it has an important role to play as the dairy industry moves toward even greater efficiency in a world where sustainability of production will be crucial,” James adds.

Professor Garnsworthy was also intrigued by the outcome, especially considering Actisaf’s effect on such a high performing herd.

“Going into the trial, the cows were already highly efficient animals with highly efficient feeding systems in place. There aren’t many ways to improve on 50kg of milk per cow per day over the first 18 weeks of lactation,” he concludes. “Here we were able to get 2.8kg of energy corrected milk more from a cow after feeding only 10g of product. These results show that Actisaf is doing exactly what it says it does – improving the digestibility of the diet and releasing more energy from feed for increased milk production.”



# ActiSaf

Actisaf® returns up to

**8X**

Your investment through improved milk yields

DRIVE MILK YIELDS  
BY INCREASING FEED  
EFFICIENCY WITH **ACTISAF®**

"In total since adding Actisaf® to the diet, yields have risen by as much as four litres per cow to between 28-30 litres per day at 170 days in milk."

Andrew Moss  
Peak Farm, Cheshire



"Milk from forage stacks up economically for us and I need to know the cows can utilise the pasture and silage I put in front of them. The Actisaf® yeast in the diet gives me that confidence and allows me to challenge the cows by reducing bought-in feed without sacrificing performance."

Jon Barber  
Friends Farm, Shropshire



"After having some digestive upset in the herd due to a poor batch of silage, we added Actisaf® to the diet and started to see a difference in just a few days. The dung became much softer, we saw stronger bulling and yields increased by around 3 litres/cow/day by the next recording."

Michael Pemberton  
Broad Haye Farm, Greater Manchester



"The nature of a Jersey's high energy diet means we are always pushing the rumen hard anyway, and the addition of Actisaf® to the diet helped the rumen function better - We saw higher intakes and better feed conversion soon after we added it to the diet!"

Geoff Pye  
Bayview Jerseys, Lancashire



"The cows perform well on Actisaf®. We're not feeding them any more forage than we used to but they just seem to be able to make better use of it. Milk from forage figures have risen to 4,291 litres and you can tell from the way the cows behave that rumen function is good."

Paul Bradbury  
Brook House Farm, Shropshire



"We're focusing on continually improving cow health, increasing litres from forage and reducing feed costs with the introduction of home-grown forage maize, and we plan to keep the Actisaf® in the diet to help us achieve this."

Dan Evans  
Little Hook Farm, Pembrokeshire



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