Advance
SILAGE INOCULANTS

Granda Team
AGRIBUSINESSOLUTIONS

No one trick pony

Rapid pH drop	Enhanced fibre digestibility	Reduced risk of heating	More milk from forage

Advance SILAGE INOCULANTS — No One Trick Pony!

Lactic Acid Bacteria

Two strains of lactic acid bacteria have been developed – *Lactobacillus plantarum* and *Pediococcus pentasaceus* – to ensure fermentative activity over a wide pH range.

Achieving a rapid drop in pH is one of the keys to making good silage. The lactic acid bacteria in **Advance** ferment a wide range of sugars into lactic acid to drop the acidity (pH) of the forage quickly and effectively.

Below pH 5 the growth of spoilage organisms is inhibited, and protein-degrading enzymes naturally present in the crop are in-activated. This produces a stable silage with minimum nutrient losses.

Micron Bio-Systems have developed two strains that provide fermentative activity across a wide pH range.

- *Pediococcus pentasaceus* dominates the fermentation from the almost neutral pH of the fresh cut forage.
- *Lactobacillus plantarum* becomes more active as the pH drops and drives the fermentation to completion.

Microbial Stimulant

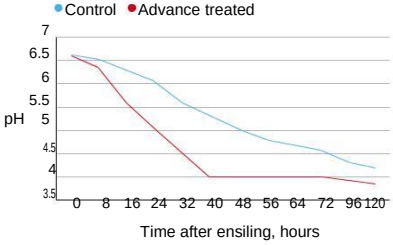
Specific sugars and mineral components act as microbial stimulants following rehydration.

Bacteria are freeze-dried to maintain their viability until ready for use. However, in this dormant state reactivation can be slow on rehydration.

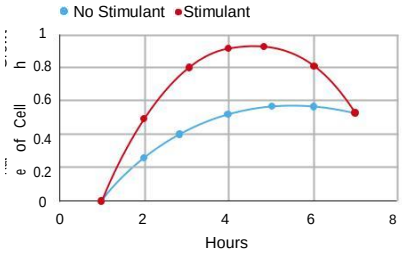
Advance therefore contains:

- Freely available sugars to kick-start microbial activity and fermentation.
- A trace element that helps to maintain the viability of the cells.

***Advance** produces stable silage by ensuring a rapid drop in pH*



Microbial stimulant in Advance promotes rapid fermentation



Enzyme Package

In conjunction with Edinburgh University, Micron Bio-Systems Limited have developed a blend of enzymes that maximise the digestibility of different forages.

- Fibre enhancing enzymes act on complex carbohydrates to improve fermentability and nutrient release from a range of forages.
- In addition, a specially selected enzyme breaks the bonds between indigestible lignin, cellulose and structural proteins making them available for fermentation and digestion. This increases the metabolisable energy of forages – for example by 0.45 MJ/kg for grass.
- Improved fibre digestibility also improves forage intake and drives increased milk production from forage.

Acetic Acid Bacteria

Lactobacillus brevis produces acetic acid which inhibits the growth of spoilage yeasts and moulds that lead to heating of clamps and TMR.

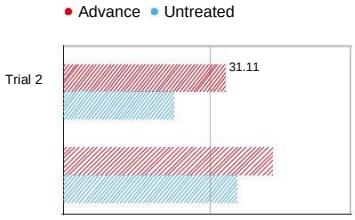
Heating in silage is an indicator that spoilage organisms – mainly yeasts and moulds – are utilising the lactic acid as an energy source to grow. This leads to valuable dry matter losses.

Lactobacillus brevis produces **acetic acid**, the only product proven to increase the stability of silage.

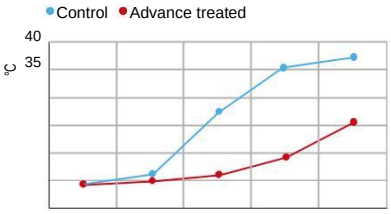
This organism is included in **Advance** to:

- Reduce the incidence of heating when the clamp is opened, or during the manufacture and feeding of a Total Mixed Ration.
- Prevent dry matter and nutrient losses.

***Advance** increases the levels of fermentable fibre in forage*



***Advance** prevents heating in silage*



More milk from forage with Advance

A collaborative project between Edinburgh University and Micron Bio-Systems analysed 96 samples of grass silage, produced in the UK, some untreated and some treated with **Advance**. The results are summarised below:

Higher Energy Content	The use of **Advance** increased the energy content of grass silage by 0.45MJ of metabolizable energy/kg DM
More energy from silage	A 30% dry matter grass silage would therefore produce an extra 135 MJ of metabolizable energy per tonne of silage
More milk from forage	5.2 MJ is required to produce 1 litre of milk. An extra 135 MJ ME will therefore produce an extra 26 litres of milk from 1 tonne of silage dry matter

Advance SILAGE INOCULANTS

Get More from what you grow

Over a 180-day winter feeding period the use of **Advance** could produce an extra 260 litres of milk from forage, leading to significant savings in purchased feed costs

or

for cows housed all year round, this would amount to an extra 450 litres of milk from forage

And, because different forages vary in structure and their nutrient composition, **Advance** comes in four different formulations:

Advance Grass
Advance Maize
Advance Wholecrop
Advance Legume

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