

EM-Silage®

Maximising Utilisation of Home Grown Forage & Feeds



Grass



Wholecrop



Maize



Crimped

EM-Silage as standard

With rapid rises in global feed prices, making the most efficient use of home grown forage and feeds has never been more important. But today's high genetic merit dairy and beef cattle require high quality feeds to exploit their potential for milk and beef production. With feed costs representing between 40–60% of the cost of milk production, producing top quality forage using EM-Silage can help maximise feed conversion efficiency.

What is EM-Silage?

The EM family of micro-organisms were isolated and developed for use in agriculture by Professor Dr Teruo Higa at Ryukyus University, in Okinawa, Japan. EM Silage has been a development by EM Agriton in the Netherlands for the European market. Following extensive trials it has now been proven in the field in commercial use over a 10 year period.

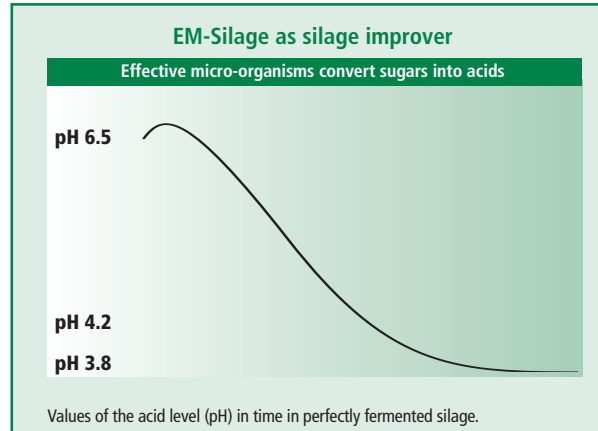
- **EM-Silage is a liquid ready to use product, which only has to be diluted with water**
- **EM-Silage is the only product on the market which has been proven to be effective in grass, maize, whole crop silages and crimped grain. Therefore there is no need to source separate products for each type of silage**
- **EM-Silage is a microbial inoculant based on an unique combination of different strains of lactic acid bacteria and yeast**

How does EM-Silage work?

- **Bacteria convert sugars in the crop into acids causing a rapid pH decline, ensuring clamp stability**
- **Yeasts produce metabolites which enhance feed energy values and prevent unwanted moulds**
- **The Silage stabilisation has a pH between 3.8-4.2**

Homo-fermentative lactic acid bacteria quickly ferment some of the sugars in the forage into lactic acid, ensuring a low pH as quickly as possible, which not only results in a more stable silage but also conserves its feed value.

Greater stability, less waste



Hetero-fermentative lactic acid bacteria produce lactic and acetic acid which improves aerobic stability, inhibiting the growth of wild yeasts and moulds, the main cause of heating and spoilage once the clamp is opened and the silage is fed out.

EFFECT OF EM-SILAGE ON AEROBIC STABILITY OF GRASS SILAGE 2 MONTHS AFTER ENSILING:

	Control	EM Silage
Weight Loss %	3.9	2.58
pH	5.88	4.36
Aerobic Stability (Hrs)	60	>525

Source; ID Lelystad report no. 2165

The yeast component causes further fermentation to occur, with metabolites enhancing the feed value. Alcohols and organic acids give EM-Silage treated forage a distinctive aroma and good palatability.

More energy, more profit

Feed Innovation Services have researched (April 2003) the effect of EM-Silage treated grass silage on the **rumen fermentation** in dairy cows. The in-vitro studies showed a significant increase of propionic acid and decrease in the production of acetic acid and methane gas. The change in the VFA composition and reduction of methane in the rumen are beneficial to both the cow and the environment. In particular the increase in available glucose precursors for milk and milk protein production from 11.5Kg DM of EM-Silage treated grass silage is worth on average an extra 1 litre milk per cow per day.

The positive effects of EM-Silage on forage and rumen fermentations makes it's use cost effective not only under poor harvesting conditions but also under favourable conditions too.

EFFECT OF EM-SILAGE ADDITIVE AFTER 2 MONTHS INCUBATION

	Control	EM-Silage Treated
Dry Matter (g/Kg)	451	440
pH	5.11	4.42
Yeasts (log/cfu/g)	2.15	<2
Moulds (log/cfu/g)	<2	<2
Lactic Acid (g/Kg/DM)	41.9	79.3
Actetic Acid (g/Kg/DM)	7.6	36.2
Ethanol (g/Kg/DM)	11.2	17.7
1,2 propanediol (g/Kg/DM)	0	10.0
2,3 Butandiol (g/Kg/DM)	0.3	0.3
Propionic Acid (g/Kg/DM)	2.2	2.4
1 Propanediol (g/Kg/DM)	0	2.3
Ammonia (g/Kg/DM)	2.5	3.5

Source; ID Lelystad report 2165

