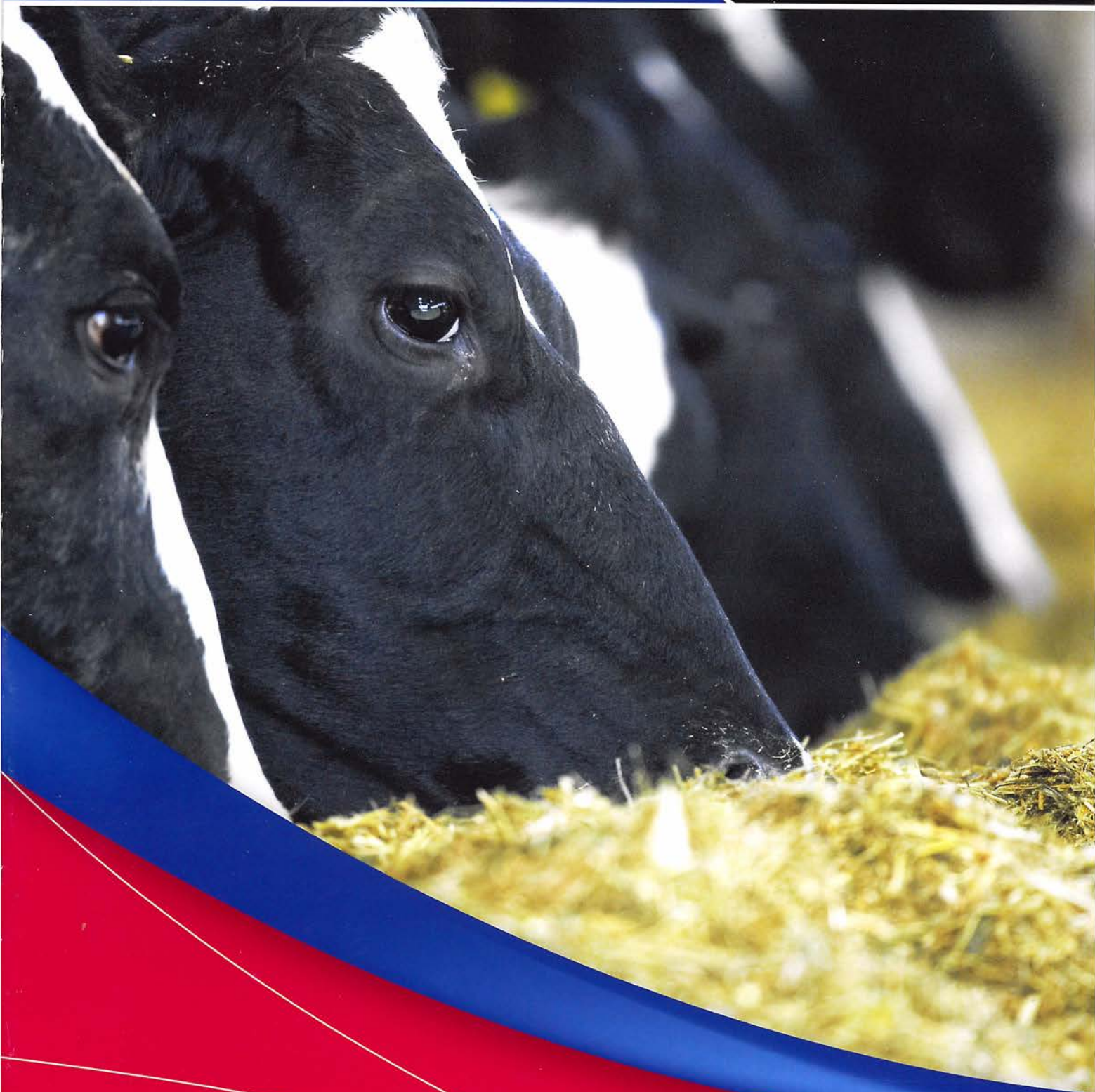


POWERSTART[®]

Live System

ACTI-MAIZE[™]

Silage additives with
a difference



For palatable and
profitable silage


Genus

ABS


GENUS ABS SILAGE ADDITIVES

Developed and approved...

Both Powerstart and Live System silage additives are based on technology developed at IBERS (Institute of Biological Environmental and Rural Sciences) which is part of Aberystwyth University in Wales and was formerly known as IGER. The bacteria in both product ranges are exclusive to Genus ABS additives.

The principles behind our additives remain simple: 1,000,000 bacteria are added to each gram of forage; the bacteria convert sugar into lactic acid; lactic acid is very palatable; because the bacteria work very quickly more sugar is preserved – further enhancing palatability, and more of the highest quality protein is conserved.

Genus ABS have been supplying farmers with silage additive since the early 1990's

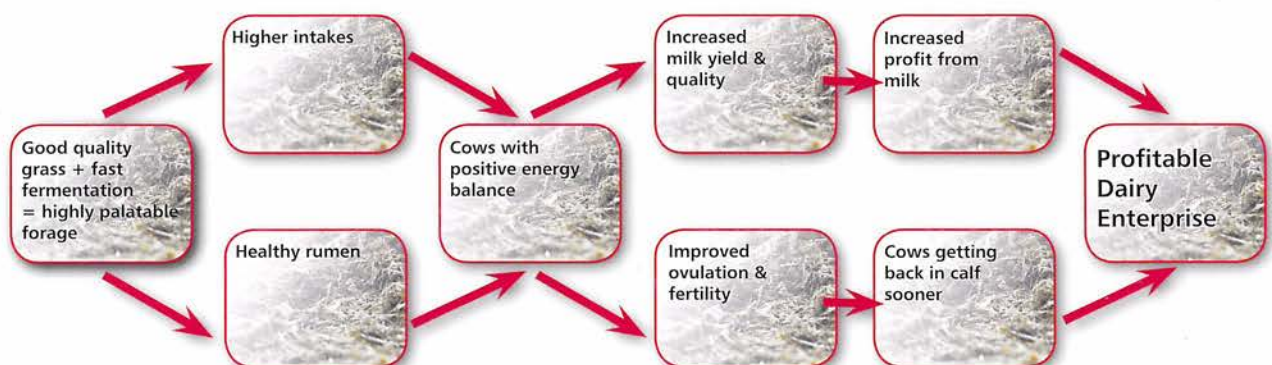
- We continue our commitment to being a leader in silage additives. This is underlined by the fact that our two strains of *Lactobacillus Plantarum* are currently (as of May 2012) pending approval by the European Food Safety Authority (EFSA).
- The logic behind the world's biggest bovine genetics company becoming



one of the most prominent silage additive suppliers is simple: cows that have higher intakes hold better condition and are more likely to get in-calf.

- We have proven that cows fed Powerstart treated silage get in-calf sooner – read on to find out more.

DIAGRAM ONE: EFFECT OF GOOD QUALITY FORAGE ON COW PERFORMANCE

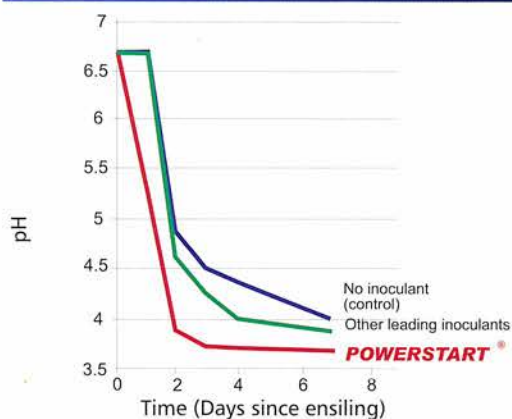


THE IMPORTANCE OF SILAGE ADDITIVE...

The forage you grow is the most cost effective food source you can provide your cows.

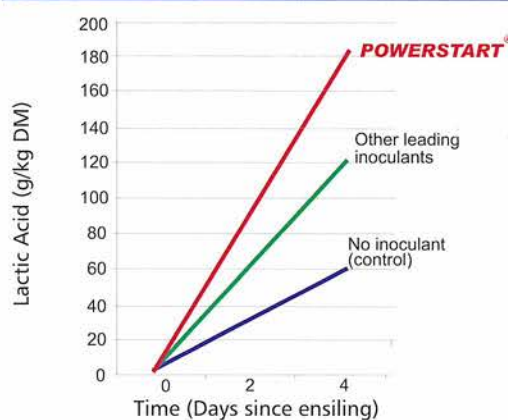
- A fast fermentation is the key to optimising the quality of your silage. The faster your silage ferments, the more essential nutrients will be retained.
- A fast fermentation means that crude protein does not break down as much. More true protein is retained in the forage and less ammonia accumulates, as a result.
- Turning forage into silage as quickly as possible with palatable lactic acid is the best way to do this, and Powerstart and Acti-Maize bacteria only produce lactic acid.
- This result is silage so palatable your cows will eat more allowing them to benefit from higher levels of nutrition available in each mouthful.
- Cow performance is optimised in herds that feed silage treated with Powerstart and Acti-Maize additives.

GRAPH ONE:
PH DECLINE



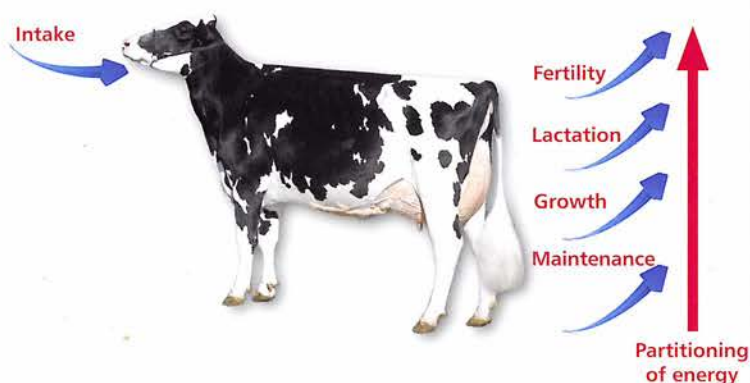
Source: IGER 2004 & 2005

GRAPH TWO:
LACTIC ACID LEVELS

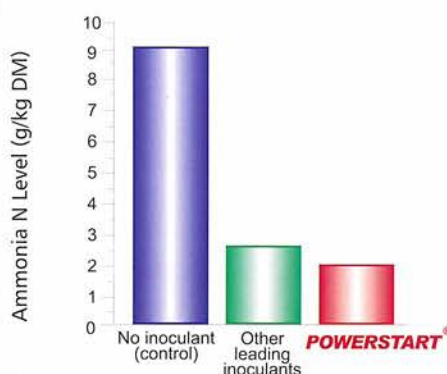


Source: IGER 2004 & 2005

DIAGRAM TWO: COW'S REQUIREMENT FOR ENERGY



GRAPH THREE:
AMMONIA LEVELS



Source: IGER 2004 & 2005

POWERSTART INSTANT & XPRESS

Accesses all the sugars available in grass...

Grass contains two types of sugar – simple and complex. Glucose, Fructose and Sucrose are simple sugars and Fructan is a complex sugar. In normal conditions over 50% of the sugars in grass are complex and in poor conditions they can make up 85%, see graph four.

The bacteria in Powerstart, AberF1, can access 100% of both the simple and complex sugars. The AberF1 bacteria convert a portion of the sugar in the grass solely into lactic acid.

Improves fermentation...

The speed of a Powerstart fermentation means that more of the quality nutrients are conserved and ammonia levels are negligible.

This fermentation efficiency means more sugar is preserved for the cow to benefit from and because the only product of the fermentation is lactic acid, intake potential is maximised.

The result is...

Cows love to eat Powerstart treated silage!

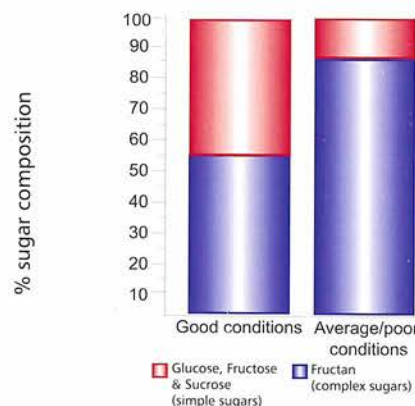
They eat more and perform better, both in terms of production and reproduction, see diagram three.

POWERSTART[®]
Xpress

Easy to use and ready for application in just a few hours...

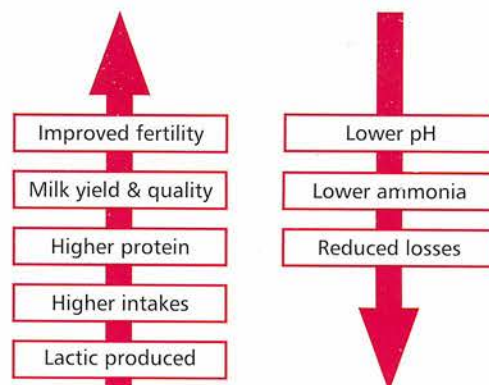
- Add water at 35°C and cover, then just 2½ hours later, Xpress is ready to use.
- Xpress is available in packs to treat 150 and 300 tonnes of forage.
- Delivered direct to your farm.

GRAPH FOUR:
TYPES OF SUGARS AVAILABLE IN GRASS



Source: Waite and Boyd 1953

DIAGRAM THREE:
BENEFITS OF USING POWERSTART



POWERSTART[®]
Instant

Convenient to use...just add water and go!

- Instant is available in packs sizes to treat 100 tonnes of forage (each pack contains 4 x 25 tonne sachets).
- Delivered direct to your farm.
- Instant is approved by the 'Organic Farmers and Growers' for use in organic systems.

ORGANIC
FARMERS
GROWERS

Product Approved for Use in Organic Systems

LIVE SYSTEM ACTI-MAIZE

What is Live System Acti-Maize?

- Acti-Maize was developed from our original Live System product and is now available in both the 'brew-up' and 'ready to use' formats.
- Once the 'L54' bacteria have been activated in water they are applied to the forage and a super fast fermentation takes place.
- Acti-Maize will promote a fast fermentation with the bias heavily towards palatable lactic acid production as opposed to other less palatable acids.
- The end result is a silage with reduced Dry Matter losses, increased nutritional content, improved palatability, resulting in higher intakes and improved cow performance.

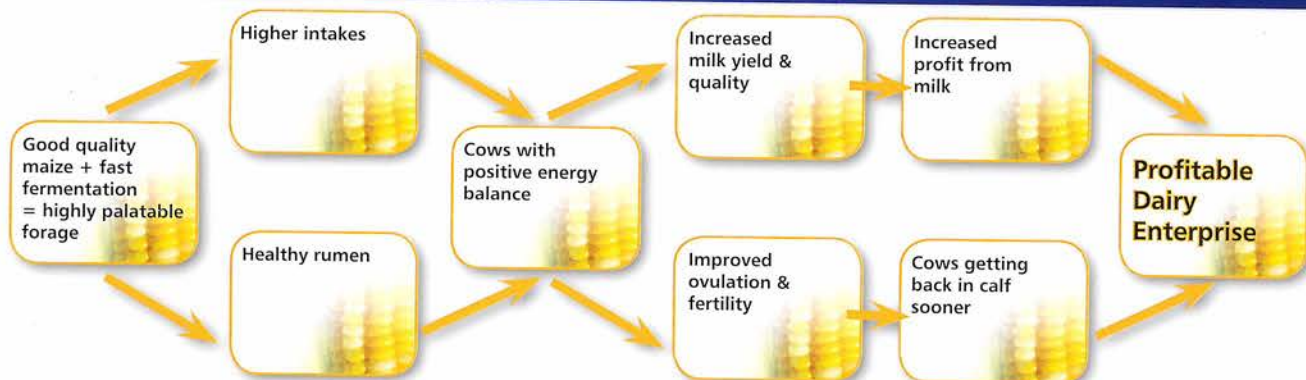


In trials* Live System Acti-Maize

- Increased intakes by 4%
- Increased milk production by 5%
- Increased milk value by 4%

*Genus ABS Trials Cedar and Chile

DIAGRAM FOUR: EFFECT OF GOOD QUALITY FORAGE ON COW PERFORMANCE



Live System

Acti-Maize™

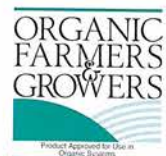
Easy to use and ready for application in just a few hours...

- Add water at 35°C and cover, then just 2½ hours later Acti-Maize is ready to use.
- Acti-Maize is available in packs to treat 250 tonnes of Maize forage.
- Acti-Maize outperforms other maize inoculants by applying 1,000,000 bacteria per gram of fresh forage.

Acti-Maize
instant

Convenient to use...just add water and go!

- Instant is available in packs sizes to treat 100 tonnes of forage (each pack contains 2 x 50 tonne sachets).
- Delivered direct to your farm.
- Instant is approved by the 'Organic Farmers and Growers' for use in organic systems.



BENEFITS AND RESULTS

Why is Powerstart affecting fertility?

We analysed data on over 25,000 dairy cows, and results showed that those cows which were fed with Powerstart treated silage, had a calving interval which averaged **10 days less** than those which were fed with non-Powerstart treated silage, see graph five.

John Cook BVSc DCHP MRCVS, Genus ABS Technical Services Director comments;

"We know cow nutrition has a significant influence on fertility. Good quality well-fermented and palatable grass silage forms the base of many rations in this country. This survey demonstrates that silage quality not only affects production but also has a huge impact on fertility."

What could a 10 day improvement mean to you?

- Every day your cow is open, it's worth at least £3 per cow margin per day*
- Cows fed Powerstart silage are open for 10 days less = £30 per cow per year
- A 250 cow herd @ £30 per cow = £7,500 per annum

Increases liveweight gain in beef...

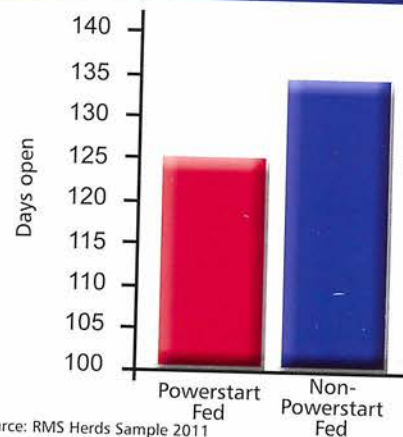
Powerstart improves silage palatability by preserving valuable true protein and reducing ammonia. Helping to improve intakes and animal performance as a result.

- In trials at IBERS, when fed to beef animals, Powerstart silage significantly improved dry matter intake.
- Powerstart silages improved liveweight gain by 45% compared to untreated silages.
- In UK farm trials, the average daily liveweight gain in 184 beef animals was over 27% higher with Powerstart treated silage, compared to untreated silage, see graph six.

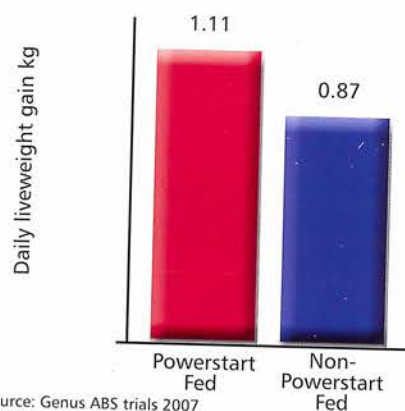
TABLE ONE: RMS HERDS INCLUDED IN ANALYSIS

	Powerstart Fed	Non-Powerstart Fed
Number of cows	11,621	13,415
Number of herds	49	54
Days open	125	135

GRAPH FIVE:
RMS HERDS INCLUDED IN ANALYSIS



GRAPH SIX:
COMBINED RESULTS OF FARM TRIALS



- Improvements in liveweight gain also leads to reduction in days to finishing, this in turn leads to a decrease in herd production costs.

FOCUS ON GOOD SILAGE MAKING

Using Powerstart can help to speed up the fermentation process in your silage clamp. But still, it is essential that you follow a best practice routine when silage making and preparation is the key. So here are a few of our top tips to help ensure you are making the best possible grass silage.

Prepare the fields...

Move the sheep...

Take care that you don't leave sheep on the field you plan to harvest for too long, as the yield of your most valuable first cut silage will be greatly reduced.

Avoid using excess nitrogen...

Dark green swards have excess nitrogen which reduces sugar levels. Excess nitrogen will make it difficult to reduce the pH when the grass is cut, often leading to an unpalatable and toxic silage. The maximum N to be applied is 75-105 units per acre, but for most dairy farms this depends on the sward and soil fertility, unless the previous crop was a cereal.

Slurry spreading...

Think about how much you've put on already. Do you know how much NPK to allow for? Don't forget that too much nitrogen will result in a grass that is hard to ensile.

Fertiliser...

Concentrate on good ryegrass based swards as secondary grasses and old pastures have lower yields and sugars. If you do have to ensile these fields then ensure you modify the fertiliser application. Think about the timing, work backwards from your target cutting day.

Walk fields...

Remove any obstacles as they can damage your harvesting machinery. Check for mole hills, make sure they are flattened before the grass grows too much and remove the moles.

Check gateways

Ensure they are clear and in good condition, as any mud on machine tyres can often end up in the clamp, leading to spoilage.

General maintenance...

- Repair the pit
- Check channels are clear and working
- Book contractor and order forage enhancer
- Service machinery
- Clean enhancer barrels

Silage making time...

Cut high and dry...

It's essential to mow the crop when dry (no rain or dew), the best time to do this is after 12pm. The swath needs to be as wide as possible or ted straight away. Leave at least three inches of aftermath and the base rubbish in the sward bottom

Wilt quickly to concentrate sugar...

A fast wilting process will concentrate the sugar content in the grass and will lead to a faster fermentation and better quality silage, but do not wilt for more than 24 hours. Ideally a dry matter of 27% should be aimed for especially if the crop is high in nitrogen or low in sugars to begin with.

For a faster fermentation under a wide range of conditions, a silage inoculant with the ability to utilise Fructan such as Powerstart will increase the level of sugar immediately available by around 50%.

It is also advisable to do a fresh grass sample.

Raking and tedding...

Set rakes and tedders correctly to avoid ground contact, especially if you have applied slurry and farmyard manure.

Soil and slurry contain undesirable bacteria, which will spoil your silage.

Fill fast and evenly...

The clamp needs to be filled fast, but evenly to ensure there are no air pockets. Roll as you fill but minimise the length of time the silage is exposed to the air. Try to produce a 'Dorset Wedge' if possible, which is short chopped, thin layers, well rolled and completely dry.

Don't roll the morning after...

Rolling squeezes out carbon dioxide, sucks in fresh air and starts a butyric fermentation instead, leading to a poor quality silage.

Completely seal the clamp...

Lactic acid fermentations do not start until all air has been removed from the clamp and no more is getting in. So, side walls should be sealed before starting and shoulder and top sheets should be weighted down as soon as possible.



Live System
ACTI-MAIZE™
POWERSTART®

For palatable and profitable silage

**For more information on any of the products in the
Genus ABS Silage Additive Range, contact us on:**

Tel No: 0870 900 1270



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