Ecocool™

Dual-acting silage additive for maize and other silages at risk of spoilage

- *Reduced fermentation losses**
- *Reduced aerobic spoilage (heating) losses**
- *Reduced mycotoxin build-up**

** All demonstrated in research – see inside*

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Why use Ecocool?

With the drive to farm sustainably, minimising losses in all silages is key.

Dual-acting ***Ecocool*** has been specially developed to not only improve fermentation – and therefore reduce 'invisible' fermentation losses – but also to keep silages aerobically stable – by fighting the yeasts and moulds that cause silage heating.

With its control of moulds, ***Ecocool*** has also been shown to stop significant mycotoxin build-up after ensiling.

Protecting your investment

A lot of investment goes into growing silage crops. Compared to the value of the silage, the cost of preserving with a dual-acting additive is minimal. And choosing the correct additive puts you in much better control of how well your silage turns out.

You can use ***Ecocool*** to protect silage crops such as maize, fermented wholecrop cereals, lucerne and higher dry matter grass.

Ecocool – targets both causes of silage loss

Fermentation losses

Without an effective additive, silage fermentation is at the mercy of whatever bacteria are present on the crop at harvest – good ones and bad ones. This allows undesirable microbes to feed on the silage's dry matter (DM) – converting it to carbon dioxide (CO_2), which is a greenhouse gas.

Heating losses (aerobic spoilage)

Certain yeasts can survive the acid (low pH) conditions produced by fermentation, and will even feed on lactic acid if air is present at feed-out or in the clamp. This causes silage heating (aerobic spoilage) as the yeasts burn away the silage's DM and energy, also releasing CO_2. As lactic acid is consumed and the pH rises, moulds can also grow, further reducing nutritional value and palatability and potentially producing mycotoxins.

Ecocool applies two strains of specially-selected beneficial bacteria for reassuring, dual-action preservation

MTD/1™

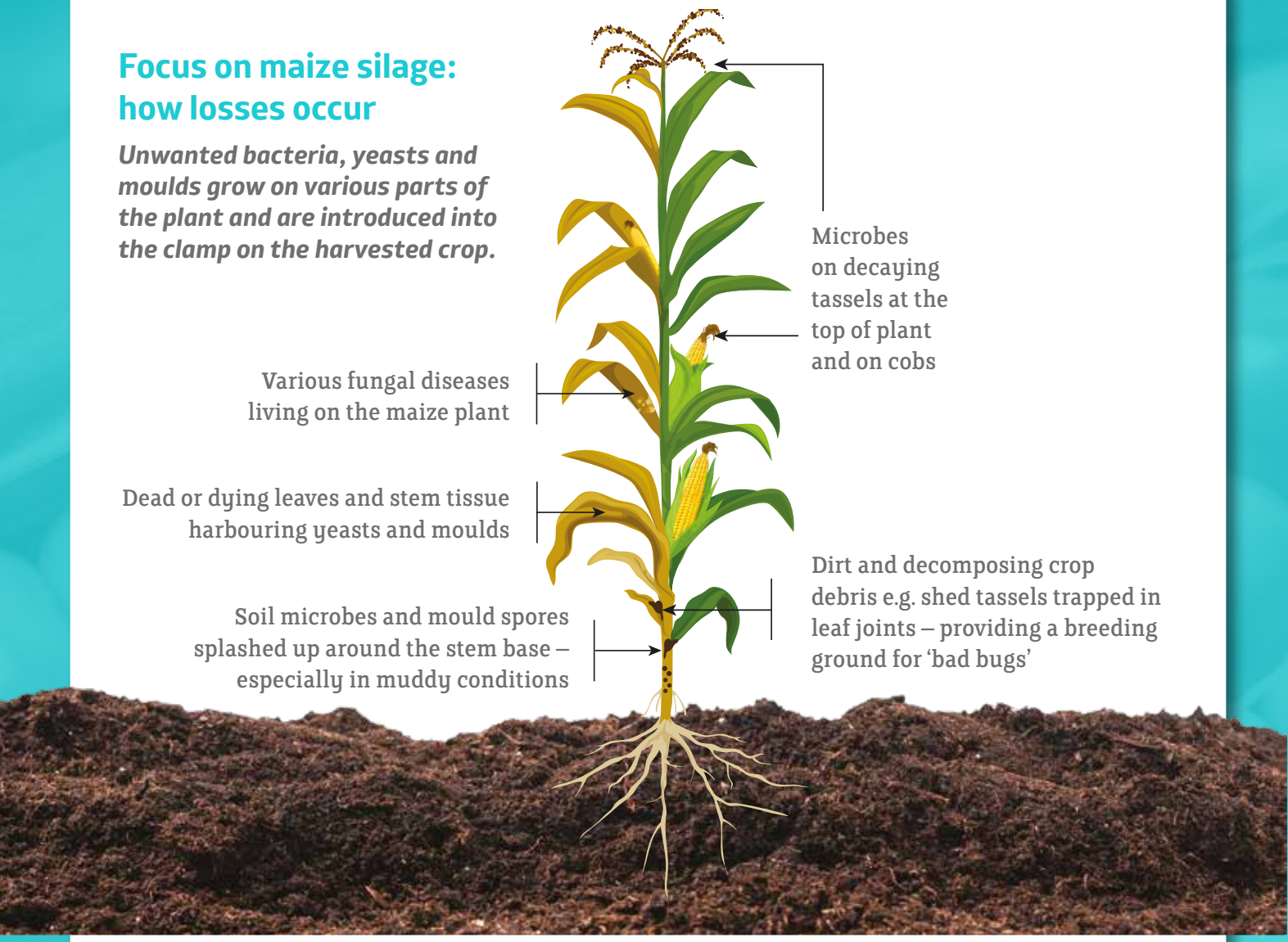
Lactiplantibacillus plantarum
For a more efficient, rapid fermentation

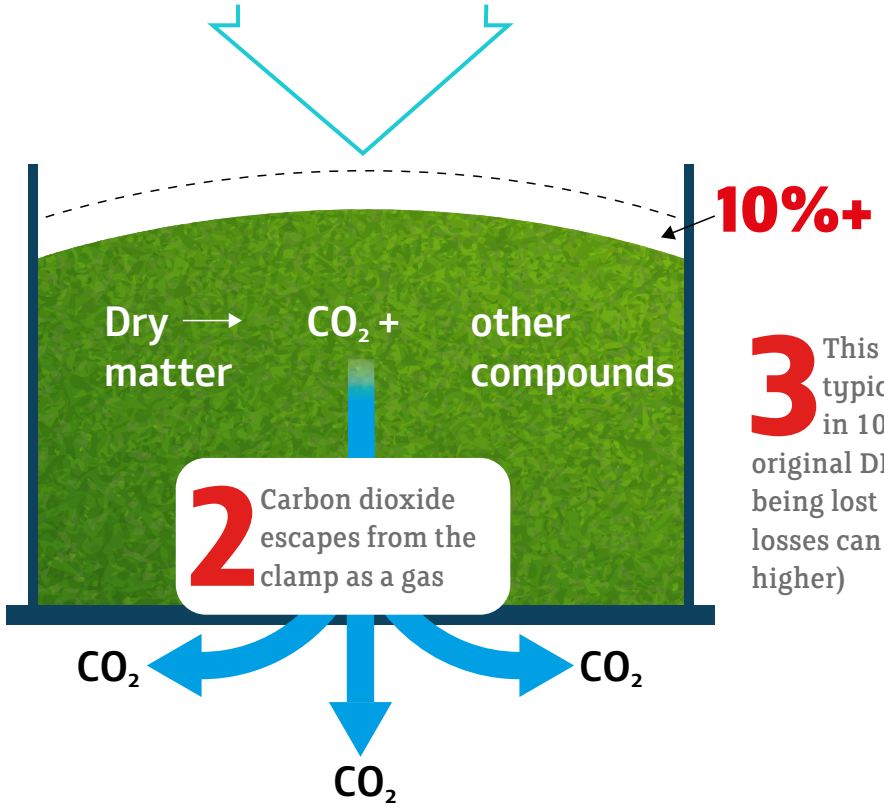
PJB/1

Lentilactobacillus buchneri
To target yeasts and moulds, and so reduce heating and spoilage and mycotoxin risks

Focus on maize silage: how losses occur

Unwanted bacteria, yeasts and moulds grow on various parts of the plant and are introduced into the clamp on the harvested crop.





1 Unwanted bacteria, yeasts and moulds introduced into the clamp feed on dry matter, turning it into carbon dioxide and water

2 Carbon dioxide escapes from the clamp as a gas

3 This loss of CO_2 typically results in 10% of the original DM ensiled being lost (however losses can be 20% or higher)

Additives should be used with good silage-making practice. See back page for other practical tips for producing better maize silage

Ecocool action 1

MTD/1™ for improved fermentation

Ecocool – proven to cut fermentation losses

While heating is the most obvious sign of dry matter (DM) losses in high energy and higher dry matter silages, just as much DM can be lost due to a poor fermentation.

Across a range of silage crops (maize, wholecrop wheat, grass and lucerne), treating with ***Ecocool*** reduced fermentation losses by as much as 27%.

Beneficial MTD/1 bacteria in ***Ecocool*** efficiently ferment sugar to lactic acid

↓

Lactic acid rapidly lowers the pH

↓

Low pH rapidly inhibits unwanted bacteria that 'feed' on silage

↓

Reduced silage losses

Ecocool™

– proven to cut fermentation losses

As much as a

27%

reduction in fermentation dry matter loss

MTD/1 – proven to improve animal performance

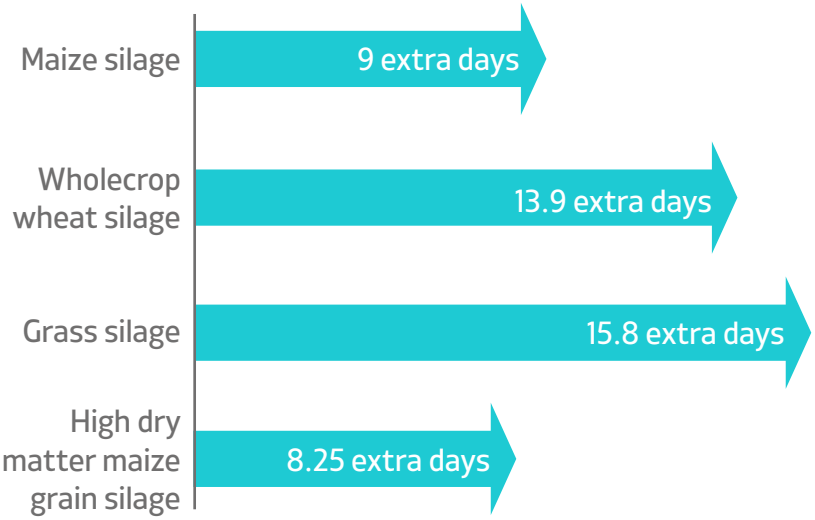
MTD/1 has been included in ***Ecocool*** because it is not only highly efficient at fermentation but has also been shown to improve animal performance. It is the same beneficial bacterial strain as used in Ecosyl. In 15 independent dairy trials, cows fed a range of silages conserved with Ecosyl yielded an average of an extra 1.2 litres of milk per cow per day.

Ecocool action 2

PJB/1 *for improved aerobic stability**

Ecocool – proven to keep silage cooler for longer

By preventing yeast growth, heating (aerobic spoilage) is stopped in its tracks. ***Ecocool*** has been shown to reduce yeast levels by more than 99% , leading to extra days of cool silage after exposure to air compared with untreated silage.



Beneficial PJB/1 bacteria in ***Ecocool*** produce controlled amounts of acetic acid

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Acetic acid powerfully inhibits yeasts

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Silage remains stable and cool

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Reduced mould growth (and reduced risk of mycotoxins)

*(reduced heating)

Ecocool™

– proven to cut aerobic spoilage losses in maize

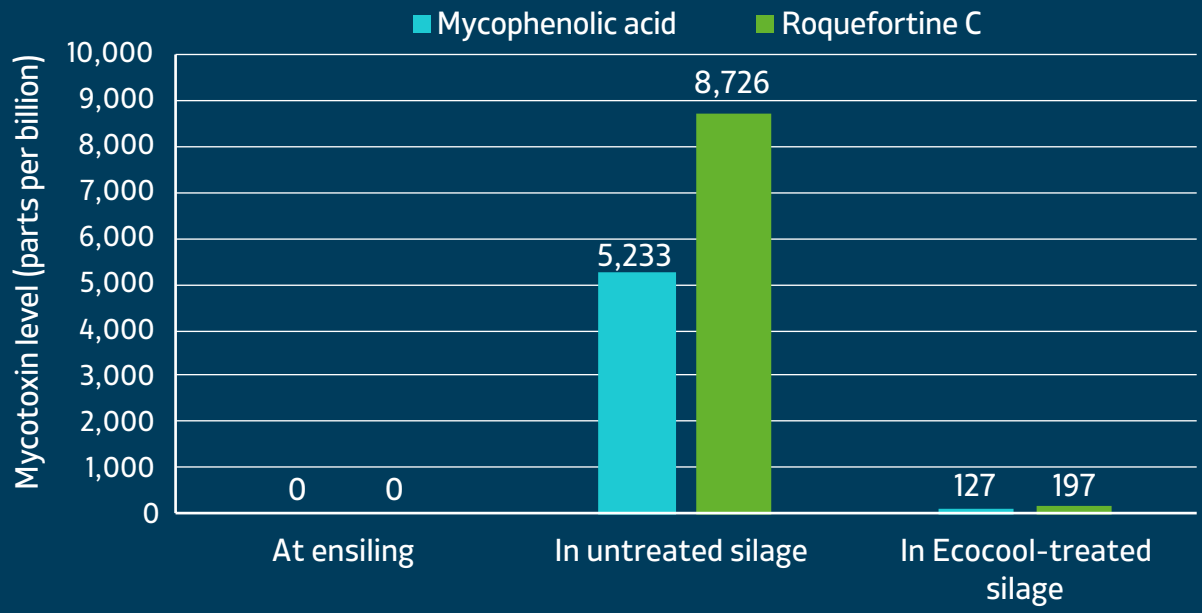
Independent research has shown

59%

reduction in aerobic spoilage dry matter loss

Ecocool – reduced mycotoxin build-up#

Controlling moulds is crucial in silages, as certain moulds produce mycotoxins. As well as reducing mould growth, applying ***Ecocool*** at ensiling has been shown to significantly reduce the build-up of mycotoxins in maize silage.



#In cases where mycotoxins are already present before ensiling, a specialist mycotoxin remediation treatment such as UltraSorb would be needed to reduce the mycotoxin burden.

Tips for better maize silage

Certain steps that help to produce nutritious maize silage – such as harvesting at the optimum % dry matter (DM) content – also aid conservation. Similarly, good consolidation and sealing not only benefit the fermentation but also reduce the risk of aerobic spoilage (heating) by starving yeasts and moulds of the oxygen they need to grow.

Tip	Why do this?
Clean the clamp before harvest	To remove undesirable bacteria, yeasts and moulds surviving on old silage and in cracks
Harvest maize promptly at around 35% dry matter (DM)	To provide a balance of: • Starch content in cobs – for energy • Foliage that is still green – for digestibility • Crop still sufficiently 'soft' for consolidation
Leave at least 15cm of maize stubble	Because the stem base is: • Low in nutritional value • At risk from soil bacteria that interfere with fermentation • At risk from yeasts and moulds
Chop to the optimum length (e.g. 1.5-2.0cm)	So the maize is: • Short enough to aid clamp consolidation • Long enough to perform in the rumen
Treat with a dual-acting additive	• To reduce fermentation losses (due to inefficient fermentation bacteria naturally present on the crop) • To target the yeasts and moulds that cause losses from heating
Use narrow clamps	• To minimise the time the face is exposed to air during feed-out • Not always possible – in these situations an additive to control heating becomes even more important
Fill the clamp in maximum 15cm layers, roll with sufficient weight and sheet thoroughly (side sheets, an oxygen barrier film & well-weighted top sheet)	• To aid consolidation and keep air out – since oxygen trapped in silage allows yeasts and moulds to thrive (Typically, maize at 30% DM requires 25% of its weight arriving at the clamp/hour to consolidate it. So 100 tonnes/hour requires 25 tonnes rolling constantly)

Features

- One bottle treats 100t of forage
- Liquid application only - variable from 20 ml/t to 2 l/t
- Tank mix life: 48 hours
- 24 month shelf life in a cool, dry place
- GMO free

MTD/1™ PJB/1

Choose a proven additive from a trusted company.

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For consistently better silage