Develop high quality maize silage with reduced wastage

www.biotal.co.uk
Maize silage is an excellent high energy forage that contains high levels of starch which are degraded slowly in the rumen. The objective is to preserve the maximum proportion of nutrients grown and reduce waste when the clamp is opened.

During fermentation of maize, the initial drop in pH occurs very rapidly due to the high sugar levels in the crop. Crops vary in the ease with which they can be ensiled and this is measured as their buffering capacity. Maize has a very low buffering capacity meaning it is readily ensiled.

However, high dry matter maize (more than 28% DM) can be susceptible to aerobic deterioration and growth of undesirable yeast and mould, which leads to heating clamps and high levels of waste at feed out.

Biotal maizecool gold and solomaize contain the patented bacteria L. buchneri 40788 which is the original and most independently trialled bacteria for high dry matter silage. It produces powerful antimicrobial compounds which inhibit yeasts and moulds, increasing the aerobic stability of the silage during feedout.

Biotal maizecool gold also contains the Biotal enzyme package that can breakdown the fibre structures of the stover, increasing overall digestibility and energy availability from maize silage.
Problems when feeding aerobically unstable silages:

- Yeasts that use lactic acid as an energy source are the biggest problem in maize silages because they start the aerobic deterioration.
- This problem was quantified at the 2015 International Silage Conference in Brazil where a study investigated the effects of yeast and air exposure on the nutritive value of maize silages fed to dairy cows.
- Exposure to air reduces milk yield and feed efficiency but the impact is far worse when yeasts are present.

Biotal maize Inoculants are proven to inhibit yeasts and increase aerobic stability:

- A reduction in the level of yeast activity will prevent heating and can increase performance
- L. buchneri 40788 has also been shown to be the most effective treatment against yeast spoilage compared to alternative treatments

Fat-corrected milk (kg/d)

<table>
<thead>
<tr>
<th></th>
<th>Fresh Control</th>
<th>Exposed Control</th>
<th>Fresh Yeast</th>
<th>Exposed Yeast</th>
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<tbody>
<tr>
<td>Control</td>
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<td>26.5</td>
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<tr>
<td>Yeast</td>
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Feed Efficiency

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<th>Exposed Yeast</th>
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<tr>
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<td>0.87</td>
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<td>Yeast</td>
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Biotal maize inoculants reduce yeast levels

Spoilage Organisms (cfu/g)

- Untreated
- L. buchneri 40788

Biotal maize inoculants reduce heating

Temperature (°C)

- Untreated
- L. buchneri 40788

Yeast level (cfu/g)

- Control
- L. buchneri 40788
- Competitor
- Maize additive
- Sulfite salt treatment
- Propionic acid
- Sodium benzoate
- Potassium sorbate

Kleinschmit, D. H., Schmidt, R. J. and Kung Jnr, L, University of Delaware
Biotal’s fully researched, registered, globally proven and specific forage inoculants come with the most comprehensive technical support services available to help you get the most from your forage, including:

• Training for contractors or farm staff to ensure best practical use of inoculants
• Crop walking and assessment training to identify maize maturity
• Advice on how to achieve the most effective fermentation
• Forage analysis and review of silage making to identify improvement opportunities

Together Biotal’s unequalled technical support and crop and condition specific inoculants can help you produce forage that delivers better performance.