

Silage Update: Wholecrop Cereal Silage



Forage Stocks

The dry weather over the last couple of months has provided ideal conditions for harvesting grass silage but poor conditions for grass growth, consequently first cuts have been of good quality but disappointing in yield. We are currently looking at a potential shortfall in forage stocks with reports of limited supplies of brewers grains. As a consequence dairy farmers may be considering conserving a greater tonnage of wholecrop cereals to offset the shortfall.

There has been a significant increase in the area of spring barley planted as a result of the wet autumn. With barley currently trading at an unexciting price of £120 a tonne ex-farm arable growers might be interested in offers to take the crop for silage.

Optimising the feeding value of wholecrop cereal silage:

1) Reduce heating during feed-out

The high dry matter content and the stemmy nature of wholecrop cereal silage make the crop more difficult to consolidate adequately during ensiling with the increased risk of heating during feed-out. The *Lactobacillus buchneri* strains within Pioneer silage inoculants convert a portion of the lactic acid into acetic acid (vinegar) and the alcohol, propandiol. Together these compounds have very strong anti-microbial properties and can inhibit the growth of yeasts that are the cause of heating at the silage face.

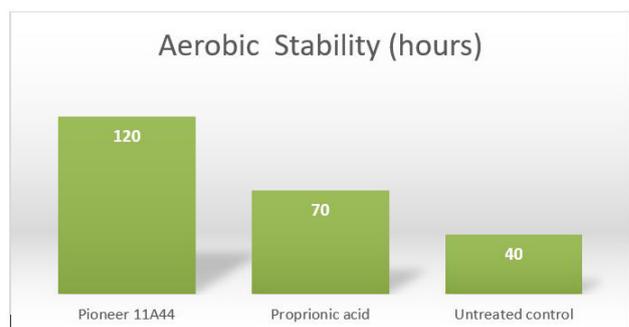


Chart 1: Silage aerobic stability (hours before heating occurs) for different treatments
Source: Pioneer: Average of eight trials. Propionic acid was applied at 5 L / T.

2) Improve the efficiency of the fermentation

The high dry matter content of wholecrop cereal silages results in a fermentation that is more restricted when compared to a wetter grass silage. The inclusion of powerful homo-fermentative lactic acid generating bacteria within 11GFT and 11G22 Rapid React ensures a rapid acid fermentation. Less of the sugar is utilised during the fermentation process resulting in higher energy silage with improved intake characteristics. As a consequence there is reduced clamp shrinkage and lower dry matter losses. With potential forage shortfalls it is important to minimise dry matter losses wherever possible.



Chart 2: Total dry matter loss of grass silage treated with 11G22 versus untreated control.
Source: Pioneer data compiled from 19 trials include both fermentation and aerobic losses.

3) Enzyme activity that increases the forage digestibility

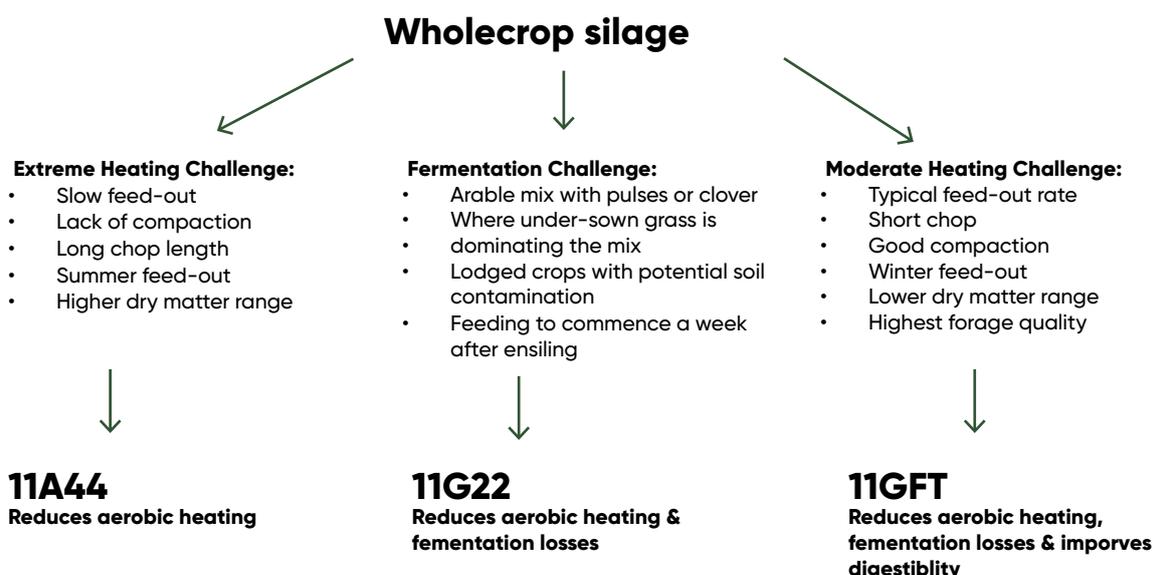
Whilst whole crop cereal provides a useful fibre and starch source within a dairy ration the high lignin content of the crop dilutes the energy density of the ration with increasing inclusion rates. The most cost-effective and practical way to improve the feeding value of wholecrop silage is through the application of the inoculant Pioneer Brand 11GFT which has three modes of action that all impact positively on forage quality: Pioneer's patented strain of *Lactobacillus buchneri* within 11GFT produces ferulate esterase enzyme that breaks the bonds between the lignin and the cellulose and hemi-cellulose thereby increasing the digestion of plant cell wall contents within the rumen. In trials Pioneer 11GFT has been shown to increase fibre digestibility by 7% from 61.2 up to 65.5 % digestibility resulting in an 8.7% increase in liveweight gain equivalent to an extra 42 kgs of milk for each tonne of silage fed as shown in Chart 3.



Chart 3: Beef liveweight gain when fed Pioneer 11GFT treated versus untreated wholecrop cereal silage Source: Pioneer: Lethbridge Research Centre, Canada 2011

Selection of the most appropriate silage inoculant:

The selection of silage inoculant needs an understanding of benefits that are sought. The flowchart below outlines the most appropriate Pioneer Brand inoculant dependent on the specific harvesting challenges encountered.



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