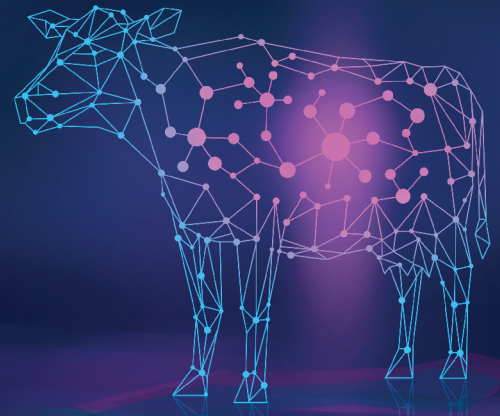


WHOLECROP SILAGES OUTLOOK

June 2025



While we have welcomed our unusually dry spring, there is no doubt grass growth has been slower than desired. Excellent conditions allowed many farmers to take first cut earlier than usual, facilitating the ensiling of forages which should be of superior quality. However, on some farms, slow grass growth has reduced the forage available on the grazing platform and hence, some farmers have resorted to using more silage stocks to make up the shortfall. We need to think about next winter's forage stocks and planning for the use of second forages, especially if this year's crop is already in use.

Wholecrop cereals are a good option to consider, as they are a valuable second forage with high nutrient value. With wholecrop silages, the 'whole crop' is ensiled, including the grains and the stalk. This means the silage will be high in both energy and fibre. They provide bulky forage and are useful to have on hand, especially when grass silage supplies are low.



SOURCE OF ENERGY



SOURCE OF DIGESTIBLE FIBRE



USEFUL FOR DRY COWS



PRESERVATION OF WHOLECROP SILAGES





SOURCE OF ENERGY

Wholecrop silages are a good source of energy, and good quality wholecrop should contain starch levels around 15 to 30% (depending on cereal type). The benefit of this starch, in comparison to feeding only the grain, is that it is slowly fermentable. This means the starch will be broken down more slowly in the rumen, resulting in a slower production of acid, and a more stable rumen pH. This helps to promote good rumen health and effective digestion. They are high dry matter forages, with good palatability, therefore there is opportunity to increase energy supply through increased dry matter intake.

Milk yield and reproduction are very easily influenced by stress due to the high energy and protein demands of lactation and the complexity of the reproductive processes and organs involved (Collier et al., 2017).

The key cost of inflammation centres around energy. The cow has a certain measure of energy available to her each day to be used for production, fertility, maintaining health and maintenance. Inflammatory responses require energy, so partition energy away from production. This can have negative effects on productivity, fertility and overall health.



SOURCE OF DIGESTIBLE FIBRE

Wholecrop silages are high in digestible fibre. The fibre supplied is digested slowly in the rumen and helps to balance the acids produced from digestion of grass silage and concentrates. As the fibre also provides structure, it means wholecrop silages are a great choice for encouraging good rumen function. Fibre is very important for encouraging rumen contractions, and the correct balance of bacteria for digestion. The bulky, fibrous nature of wholecrop silage makes it an ideal forage to complement wetter grass silages.



USEFUL FOR DRY COWS

While wholecrop silages are beneficial for milking cows, they can also be a very useful feed for dry and transition cows. The starch provides necessary energy to meet the cow's energy requirements, while also contributing to the requirements of the growing calf. The high fibre content helps to achieve adequate rumen fill, which is important for maximising dry matter intakes after calving. Additionally, wholecrop silage is typically lower in potassium than grass silage and is a safe forage to feed to dry cows to minimise the risk of milk fever.



PRESERVATION OF WHOLECROP SILAGES

Good fermentation is crucial for the preservation of wholecrop silage. A successful fermentation ensures optimal availability of nutrients, while reducing wastage due to heating and spoilage. As wholecrop silages have a bulky, open structure, it is difficult to compact them as well as grass silage, resulting in air pockets throughout the pit. This leads to increased risk of moulds and nutrient degradation. Using a suitable silage additive can help achieve successful fermentation. Silosolve FC is a good option as it scavenges oxygen in the pit, facilitating a faster and more effective fermentation. This helps to reduce dry matter losses and improves stability of the silage once the pit is opened.





SILOSOLVE® FC RESEARCH

SiloSolve® FC

SiloSolve® FC reduces spoilage in maize silage

Recent studies have shown that **SiloSolve® FC** helps keep maize silage fresher for longer. This is due to two bacterial strains within the formulation working together to decrease dry matter loss and reduce spoilage. **SiloSolve® FC** contains a novel, patented strain of bacteria called *Lactococcus lactis* O224, which reduces residual oxygen in ensiled maize, which limits the ability of yeast and mould to grow. After 90 days of fermentation, yeasts and moulds were significantly lower in maize silage treated with **SiloSolve® FC** than in the untreated maize silage, as shown in Table 1. This means there will be less wasted forage, which is more cost effective for the farm, and also reduces the likelihood of the development of mycotoxin challenge.

Table 1: Fungi present in maize silage after 90 days of fermentation (Christian Hansen, 2018)

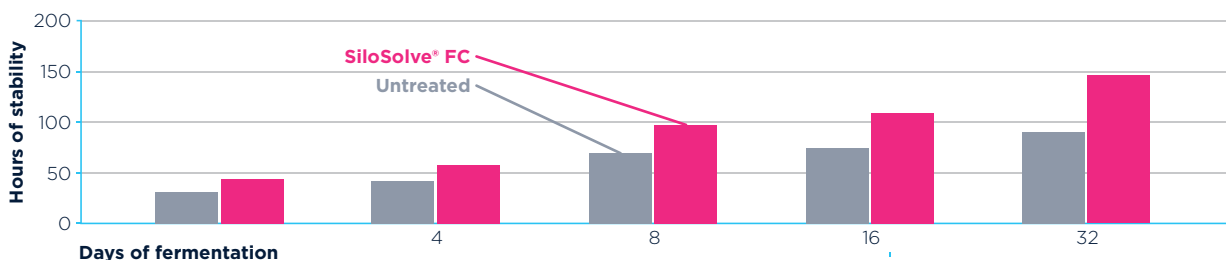
| Treatment | Moulds, CFU/g | Yeasts, CFU/g |
|---------------|---------------|---------------|
| Untreated | 1,018 | 8,600 |
| SiloSolve® FC | 15* | 19* |

*Significant difference for treated vs. untreated ($P < 0.05$)

SiloSolve® FC preserves maize silage after short periods of fermentation

SiloSolve® FC preserves feed by accelerating fermentation. It does this through the inclusion of, *Lactobacillus buchneri* DSM22501, which preserve silage by producing acetic acid. This helps to control the growth of spoilage microorganisms and increases aerobic stability. **SiloSolve® FC** works both during fermentation and at feed out. Farmers will notice their silage stays fresher for longer, regardless of how long it has been fermented, which makes it a smart choice for producers who want the flexibility to access their forage whenever they require. In some cases, it has been possible to open silage pits after just 7 days of fermentation. During early opening, the hours of stability were significantly increased in maize silage treated with **SiloSolve® FC**, compared to the untreated maize silage as shown in Figure 1.

Figure 1: SiloSolve® FC increases stability at early opening (Christian Hansen, 2018)



*Significant difference for treated vs. untreated ($P < 0.05$)





SILOSOLVE® FC RESEARCH

SiloSolve® FC

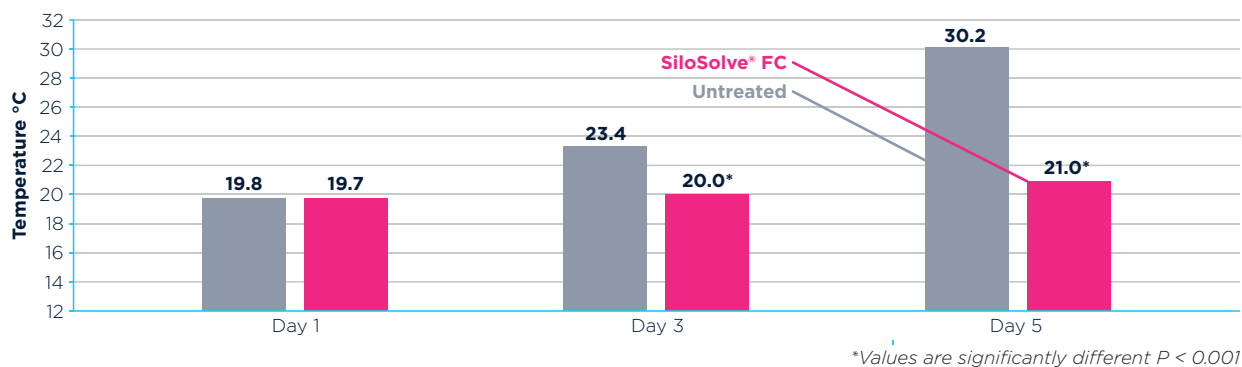
SiloSolve® FC improves preservation and stability of wholecrop barley

A study has shown how **SiloSolve® FC** improved aerobic stability of wholecrop barley silage and TMR containing wholecrop barley. Compared to the untreated silage, **SiloSolve® FC** enhanced fermentation and reduced dry matter losses, as shown in Table 2. There was less production of butyric acid, therefore enhancing palatability and the temperature of TMR was maintained, even after 5 days of aerobic exposure, as shown in Figure 2. A reduction in heating helps preserve the nutrient value of the silage, which is more cost effective for the farm.

Table 2: Stability and preservation of wholecrop barley after 120 days of ensiling (Copani et al., 2019)

| Measure | Untreated Silage | SiloSolve® FC Silage | P - value |
|---------------------------|------------------|----------------------|-----------|
| Aerobic stability (hours) | 258 | > 720 | P < 0.01 |
| pH | 6.18 | 4.08 | P < 0.01 |
| Yeast (log10 CFU/g) | 4.06 | 1.88 | P < 0.01 |
| Mould (log10 CFU/g) | 1.7 | 1.51 | P < 0.01 |

Figure 2: Temperature of TMR after 1, 3 or 5 days, containing wholecrop barley which was fermented for 120 days (Copani et al., 2019)



Conclusion

In conclusion, wholecrop silages can be a valuable addition to dairy cow diets, both during lactation and the dry period. For more information on incorporating wholecrop cereals into your forage stocks, or on SiloSolve silage additives, please contact **Trident MicroNutri** on **02894 473478** or visit www.tridentmicronutri.com.

