

SiloSolve® FC allows for early opening of maize silage



Introduction

Most farmers will recognize the challenges of silage management during feed out. Heating of silage largely due to the growth of yeast and mold is particularly problematic. In addition certain molds produce harmful mycotoxins. Mycotoxins may compromise production and health of animals. Another challenge could be feed shortage, forcing farmers to initiate feed out well in advance of the optimum 90 days of fermentation. A shorter fermentation time is problematic as this will not allow the silage to reach a stable stage. The risk of heating and loss of valuable nutrients may jeopardize milk production and could lead to a severe economic impact.

Research objective

The objective of this study was to determine the effect of SiloSolve® FC on short fermentation time; 2, 4, 8, 16 and 32 days of fermentation on the aerobic stability in maize silage.

Materials and methods

A research trial was conducted at the Institute of Animal Science LVA, Lithuania. Whole crop maize with a dry matter (DM) content of 34,4% was chopped by a forage harvester under farm conditions to a length of 2 cm and ensiled in mini silos. Two treatments each of five replicates were included in the trial. Untreated corn and corn inoculated with SiloSolve® FC at a dose of 150.000 cfu/g of fresh forage. Within 2 h from crop preparation, mini silos were filled with approximately 3 kg fresh cut whole maize corn, sealed and fermented for 2, 4, 8, 16 and 32 days at a constant temperature of 20°C. Chemical and microbial parameters were determined after each fermentation point and a 7-day aerobic stability test was performed. Aerobic stability is determined by monitoring the temperature increase in silages stored in insulated PVC-tubes at 20°C ambient temperature.

Results and discussion

SiloSolve® FC is a completely new silage inoculant that combines the effects of a proven lactic acid bacterial strain (*Lactobacillus buchneri* DSM22501) with a unique strain of *Lactococcus lactis* O224 with an oxygen scavenging ability. As soon as silage is exposed to air during feed out, yeast and molds will utilize the nutrients and grow dramatically fast, with heat formation as a result. Using SiloSolve® FC will increase the aerobic stability significantly even after a very short fermentation time compared to the untreated control ($P < 0,05$). See Figure 1 for further details.

The benefit from improved aerobic stability is a decrease in DM loss. In this study there is an average of 2,4 percentage point decrease in DM loss for the treated silage compared with the untreated silage, after each fermentation time + 7 days aerobic stability challenge, see Table 2 ($P < 0,05$).

Figure 1. Increases stability at early opening

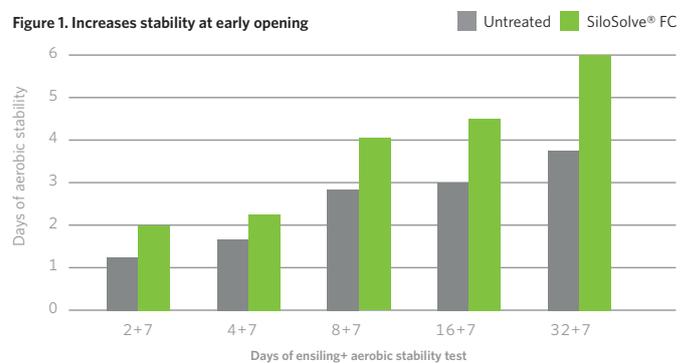
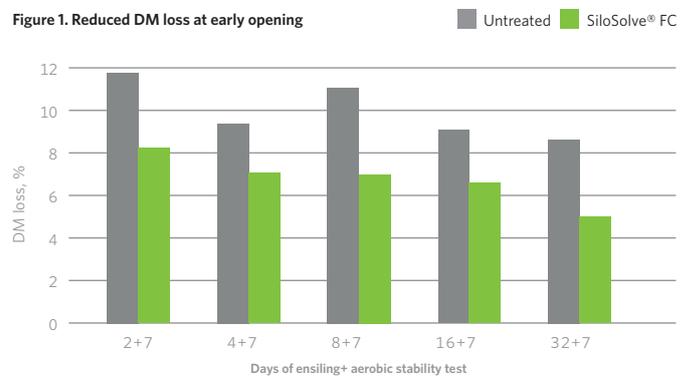


Figure 1. Reduced DM loss at early opening



Conclusion

The fast fermentation and exclusion of oxygen preserves the silage and increases the stability after 2, 4, 8, 16 and 32 days of fermentation. The increased preservation of the corn silage leads to a decrease in dry matter loss and preservation of the high quality nutrients for the dairy cows. Therefore addition of SiloSolve® FC opens a completely new advantage for dairy producers around the world.