

# Influence of storage period on the quality of a maize silage



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## Introduction

On farms, sometimes maize is ensiled and the feed-out of the maize silage begins immediately. Silages with poor hygienic quality cause decreases in feed intake by about 10–20%.

An experiment was conducted to investigate the influence of the storage period of a maize silage on fermentation quality, microbiological quality and aerobic stability.

## Material and Methods

Six 700-L containers were filled with maize at an average dry matter (DM) content of 37%. The density of the forage amounted to 171 +/- 10 kg DM/m<sup>3</sup>.

Treatments Daily feed-out	Feed-out period started the day after ensiling	Feed-out phase started after a two-month storage period
5 cm	1 container	1 container
10 cm	1 container	1 container
5 cm +	1 container	1 container

+ chemical product, active ingredient ammonium propionate, dosage 6 kg/t



The maize silage removed daily was weighed, and on days 0, 1, 4, 7, 10, 14 (15) and 18, samples were taken to analyse pH and microbiological parameters (yeasts and moulds) and aerobic stability.

## Results

In the silages whose feed-out period started immediately, the silages were characterised by high numbers of yeasts (Fig. 1) and moulds (Fig. 2). According to the VDLUFA quality assessment, many samples were classified as category 4, meaning they were spoiled.

In nearly all 700 L containers, where the feed-out period started immediately, the silages were already warm. The test of aerobic stability showed they were aerobically instable (Fig. 3). This was also the case when the silage was treated with the additive.

After the two-month storage period, the numbers of various microorganisms were in most cases within the normal range, and the silages had a better aerobic stability.

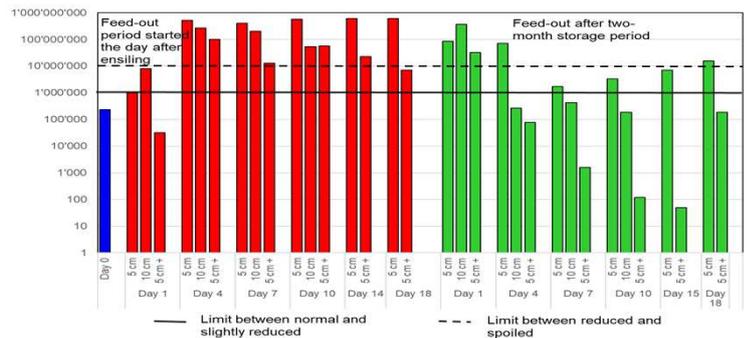


Figure 1. Yeast count in the maize silages (cfu: colony forming units).

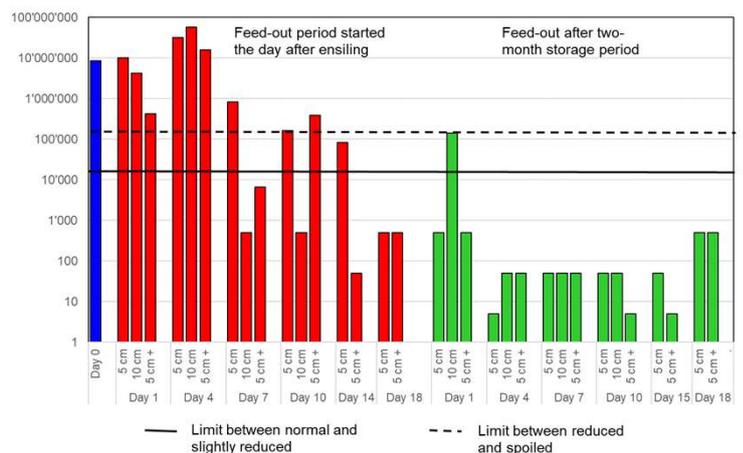


Figure 2. Moulds in the maize silages (cfu: colony forming units).

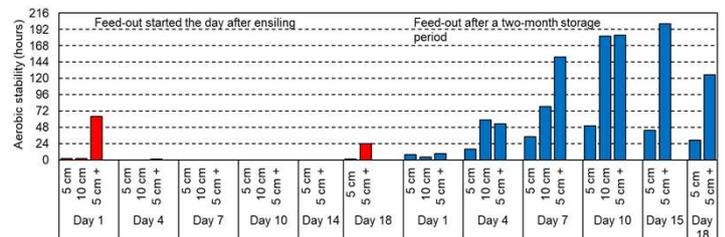


Figure 3. Aerobic stability of the maize silages.

## Conclusion

Due to the high numbers of yeasts and moulds, feeding out the maize silage immediately after ensiling cannot be recommended. After the two-month storage period, various microorganisms were in most cases within the normal range, and the silages had a better aerobic stability.