ENSILAGE OF WILTED LUCERNE TREATED WITH DIFFERENT TYPES OF BIOLOGICAL PRESERVATIVES

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Lucerne is one of the most valuable protein-feedstuff of Hungary. 60-65% of the lucerne is consumed by farm animals as fresh forage or hay, while the remaining 35-40 % is used for production of haylage or silage. The dry matter and fermentable carbohydrate content of lucerne are relatively low at harvesting. Besides, its buffer capacity is high because of the high protein content and cation concentration. Due to these facts lucerne belongs to the food that does not easily fermentable. For its ensilaging additives are frequently used. Recently biological additives containing lactic acid bacteria have been used.

In the experiments the basic row material was originated from 2nd cut lucerne. The lucerne was cut with rotation scythe in the mid of blooming/early flowering maturity. The chopping was carried out with Jaguar-chopper. The chop length was 2-4 cm.

Treatments:

T0 Untreated control

T1 *Lactobacillus plantarum* + *Pediococcus pentosaceus* (9,1 x 10^{10} CFU/g inoculant) 1 g/ 1 tonne wilted lucerne

T2 *Lactobacillus pentosus* DSM 14025 (1 x 10^{11} CFU/g inoculant) + *Pediococcus pentosaceus* DSM 14021 (2,5 x 10^{10} CFU/g inoculant) 1 g/ 1 tonne wilted lucerne

T3 *Lactobacillus pentosus* DSM 14025 (5 x 10^{10} CFU/g inoculant) 2 g/ 1 tonne wilted lucerne

In each treatment small sized containers of 4.2 l cubic capacity closed by screwed hat was used. The filled micro containers were stored for 100 days. The containers were opened on the 1st, 2nd, 3rd, 6th, 14th and 100th days following the day of ensilage.

At the time of ensilaging the characteristics of ensilaged row material was similar to that of lucerne at stage of early flowering maturity medium wilted (45 % DM).

The initial fermentation was the strongest by T2 treatment. The highest level of lactic acid production was detected during 6 days of fermentation comparing to other treatments. The T3 treatment increased the lactic acid production from 2nd day to 6 day effectively. The lactic acid production of T1 treated lucerne was slow on the first 3 days of fermentation, but was higher than the untreated control on the 6th day. Significant differences were found between the inoculants treated lucerne silages in pH, and ammonia content compared to each others, and definite difference was found to the control. The carotene content of T3 treated lucerne silage was significantly higher compared to the control. There were some differences between fermentation products and nutritive values of silages but they were no significant. The carotene loss was less in treated silages and considerably less with *T3* treatment. All silages remained stable on 7 days aerobic conditions.