

Effect of lucerne preservation method in lamb feeding

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Under our climatic conditions a considerable part of green forage is stored for winter feeding of animals. Therefore it is very important to choose the most efficient method of lucerne preservation and utilization.

The objective of this study was to compare 10 methods of green lucerne preservation for lamb fattening : silage without additive - control, and with Acidol 50, Pentasil 80 or formic acid ; 2 haylages with dry matter (DM) about 40 % - without and with formic acid, haylage without additive with DM 56 %, field dried hay and barn dried hay ; and dehydrated meal. All additives were applied at a rate of 6 l/t.

The study was carried out with lucerne variety Dunavka second regrowth, harvested at the stage of early flowering with a content of 22 % crude protein and 28 % crude fibre on a DM basis. Productive effect was determined in a trial on 140 male lambs with an average live weight of 35 kg of the Danube fine wool race, divided by analogs in 10 groups. Lamb ration consisted of equal parts (50 : 50) by DM of maize mash and lucerne forage from the respective treatment. The animals were fed *ad libitum*. The trial continued 56 days.

When DM increased, organic acid content in silage decreased. The additives improved fermentation process and decreased organic acid content in silage. Formic acid inhibited more strongly than Pentasil 80 and Acidol 50 the production of organic acids and ammonia nitrogen in silage. Dehydration increased the DM intake (DMI) by 29 % and lamb gain by 68 %, and decreased forage consumption per kg gain by 23 %, compared to control. The additives Acidol 50, Pentasil 80 and formic acid increased silage intake by 5.5, 7.3 and 6.4%, lamb gain by 15, 26, and 28 %, and decreased forage consumption per kg gain by 8.3, 16.5 and 16.8 respectively, compared to control. Lucerne preliminary drying increased the intake of haylage by 25 % on the average, the gain by 41 to 57 %, and decreased forage consumption per kg gain by 12.8 to 20 %, compared to control. The haylage with higher DM content gave a better effect.

The haylage with 39.3 % DM equalled in effect the field dried hay, and the haylage with 55.7 % DM equalled the barn dried hay, but the hays and haylage were inferior to dehydrated lucerne.

Method of preservation	DM %	pH	Organic acids % dry matter			NH ₃ -N % total	Gain g/day	DMI kg/day/head	DM kg/kg gain
			Lact	Acet	But				
Silage - Control	19.8	5.81	1.7	6.2	8.4	25.6	188	1.09	5.80
Silage + 0.6 % A	21.5	4.88	5.2	7.0	3.2	14.4	216	1.15	5.32
Silage + 0.6 % P	21.1	4.59	4.0	3.1	2.6	9.2	236	1.17	4.96
Silage + 0.6 % F	21.3	4.27	5.4	6.2	0.0	6.4	240	1.16	4.83
Haylage -	39.3	4.56	9.2	3.4	0.0	6.4	265	1.34	5.06
Haylage + 0.6 F	40.8	4.51	7.6	3.5	0.0	4.3	295	1.37	4.64
Haylage	55.7	5.00	7.0	1.8	0.0	5.2	285	1.36	4.77
Hay, field dried	82.9	-	-	-	-	-	264	1.35	5.11
Hay, barn dried	83.5	-	-	-	-	-	281	1.36	4.84
Dehydrated, meal	88.2	-	-	-	-	-	316	1.41	4.46

Note : A-Acidol 50 ; P - Pentasil 80 ; F - formic acid ; Lact - lactic ; Acet - acetic ; But- butyric.