When to move silage bales after wrapping

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"How long can I leave wrapped bales of silage in the paddock before they are moved?" is a question continuously debated by farmers, contractors and plastic film suppliers. Should they be transported within a few hours after wrapping and before lamination of the film layers take place, or after a week or so when lamination is completed and gas production from respiration and microbial activity in the bale has ceased?

For convenience, labour saving, equipment costs, machinery availability, etc. many bales are now wrapped in the paddock of baling. They are moved at some later stage from within hours of wrapping to several weeks, some even longer judging by the regrowth in some paddocks!

Recent Norwegian research reported indicated that wetter bales (16.6 % & 24.5% DM) moulded least when transported to the storage site immediately after wrapping BUT the wilted bales (45% DM) moulded least when transported from the paddock 4 – 5 days after wrapping. Under Australian conditions recommended DM contents for round bales are approximately 40 – 50% DM.

Recent Swedish research indicated that there was no effect on baled silage (losses or quality) regardless of when bales were transported after wrapping.

Seventy round bales of grass/clover mix was harvested in two cuts. The first cut crop was wilted and baled at 43 per cent dry matter (% DM) and the second, later cut at 75% DM. No silage additives were used. A combined baler/wrapper (Vicon RV 1601 Combi-bale) with a variable chamber was used for baling and wrapping.

A Trima Quadrogrip, similar in principle to the Kverneland Silagrip 7700 with lifting tubes fitted with two rollers, but presumably with four arms on the Quadrogrip, transported the wrapped bales at five different intervals of time after wrapping. One group (controls) were not gripped at all, while the others were gripped and moved after 1 hour, 3 - 5 or 24 hours, 3 days and 10 days from wrapping.

Measurements of bale tightness were made on two occasions after wrapping. First at 6 weeks and the second at 19 weeks in the first cut crop and at 13 weeks in the second cut crop. Visible surface yeast and mould was also recorded at opening each time.

Despite the differences in DM contents, there were no differences in the tightness of the plastic film between the first (wetter heavier bales) or second (drier lighter bales) cuts. However, the bales handled between 3 to 5 hours and 3 days after wrapping were found to be the tightest at both cuts, while those not handled at all, or handled on day 10, were the least tight.

The earlier, wetter cut crop resulted in silage of lower pH (more acidic), with higher ammonia-nitrogen, reflecting more breakdown of the crude protein in the silage and lower yeast and moulds than the second cut crop (See Table 1). Conversely, the later,

drier cut crop produced silage with minimal protein breakdown (restricted fermentation) as indicated by the much lower Ammonia-Nitrogen figure (Table 1) but a higher presence of mould (more air entrapped in bale at baling) and but no significant difference in yeast counts.

Table 1. Prevalence of ammonia nitrogen, yeast and mould over two cuts

	Dry Matter %	Acidity (pH)	Ammonia-Nitrogen as % of Crude Protein	% Yeast	% Mould
Cut 1	**42.3**	**4.7**	**9.9**	**0.01**	**0.17**
Cut 2	**75.7**	**5.6**	**1.6**	**0.05**	**0.65**

Unfortunately no measurements were taken for the effect of time of movement from the paddock on the nutritive values of the silages in this experiment.