

TARGET DRY MATTER (SILAGE) AND MOISTURE (HAY) CONTENTS

FRANK MICKAN

Fodder Conservation & Pasture Specialist
DPI, Ellinbank

SILAGE:

To ensure the desirable lactic acid fermentation for wilted silages (clamps and bales), forage should be harvested in the correct dry matter (DM) range for the particular silage storage used. All silages must be sealed airtight as soon as possible after harvesting, and all holes patched immediately. Poorly fermented and/or mouldy silages will be the result of forage harvested over too long a period, too dry or too wet. These silages will be less palatable, lower quality, unpleasant to smell and result in reduced animal production.

Table 1 indicates the suggested DM contents for the various crops and type of harvesting. Precision chopped material (1 - 5 cm) can be harvested at drier contents because the shorter length material allows for more air exclusion due to denser compaction compared to longer material cut by a loader wagon. However precision chopped material can also be harvested at the lower end of the DM ranges with no detriment to quality.

Table 1: Recommended DM contents for various crop types, harvesting methods and storage types

Crop type (Stage to cut)	Pit/stack (DM %)	Bale (DM %)
Pastures (Boot – first head)		
Long chopped	30 - 35	40 – 55
Precision chopped	30 - 40	
Lucernes (Bud - <10% flowering)		
Long chopped	33 - 40	40 – 55
Precision chopped	35 - 45	
Other Pasture legumes (early – mid-flowering)		
Long chopped	33 - 40	40 – 55
Precision chopped	35 - 45	
Whole crop cereals (Wilted and fermented) (Oats, barley wheat, triticale)		
Boot – flowering stage	35 - 40	40 – 50
Whole crop cereals (Direct Harvested) (Barley wheat, triticale)		
Soft dough stage	35 - 45	35 – 45
Whole crop cereals (Direct Harvest + 4% Urea) (Barley wheat, triticale)		
Soft – hard dough stage	50 - 60+	
Maize		
Precision chopped	33 - 36	
Summer Forages (Sweet sorghums, millets)		
Long chopped	30 - 35	35 – 45
Precision chopped	30 - 40	

Hay:

Over 80% of haystack fires have involved large square bales due to their very dense nature and large volume:surface area. These should be at least 6 - 8 degrees drier than small squares at baling. Hay should be baled at the suggested moisture levels in Table 2 but, in practice, hay is often baled at higher moisture contents.

Table 2. Recommended Moisture Contents (%) for Safe Storage of Hay

Type of Bale	Moisture content of hay (%)	
	Recommended	Maximum*
Small square bales	18 - 20	23 – 25
Large round bales	14 – 18	20 – 22
Large square bales	12 - 14	15 - 17
Export Hay	< 12%	

* Hay stored at these maximum moisture contents (not recommended) will result in some reduction in dry matter and quality due to slight heating caused by plant respiration and possibly mould growth.