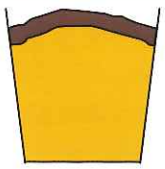
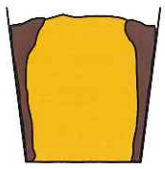
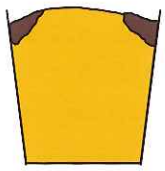
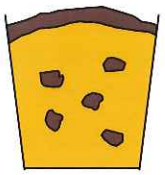
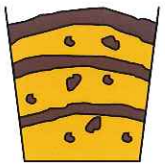
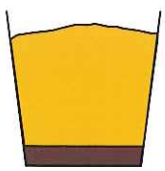
Section 9.10

Appendices

9.A1

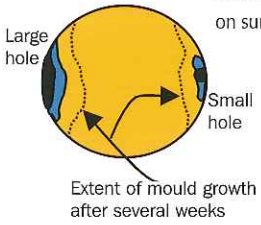
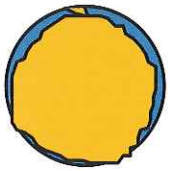
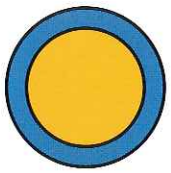
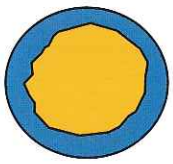
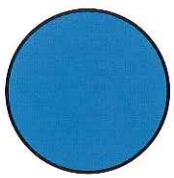
Spoilage losses with forage-harvested silages – likely causes and solutions

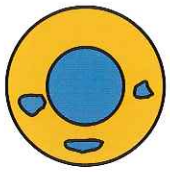
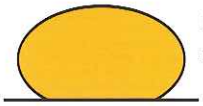
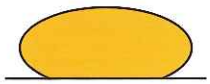
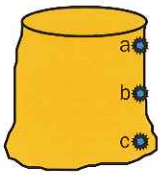
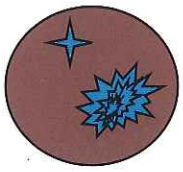
		PROBLEM	LIKELY CAUSE	SOLUTION
1.		Top waste or crust. Actual losses are much greater than they appear.	Inadequate sealing. Final rolling insufficient and/or final load DM too high.	Adequate rolling/compaction Ensure plastic sheeting is adequately weighted, use plastic sheeting on walls of stack. Ensure seal between wall and plastic.
2.		Side waste.	Porous walls. Inadequate seal between plastic and wall. Inadequate compaction along edges.	Apply a sealer to concrete walls or use plastic sheeting on walls of stack. Ensure edge compaction is adequate.
3.		Shoulder waste.	Lack of consolidation, or ineffective sealing of shoulders.	Improve compaction and sealing technique. Plastic sheeting folded over from the side walls will assist. Ensure edge compaction is adequate.
4.		Top waste and mouldy pockets throughout stack.	Inadequate consolidation of over-wilted or mature material resulting in trapped air.	Improve consolidation, seal immediately and weigh down sheet. Avoid over-wilting. Top stack with loads of moist or direct cut material. To improve compaction – spread loads evenly over area; spread loads to <30 cm depth
5.		(a) Layers of poor-quality dark brown unpalatable silage. (b) Rotten pockets.	Frequent stops, lack of rolling and covering during extended stops. Forage too wet. Contamination by soil.	Wilt longer. If major delay occurs seal off stack as a separate batch. Avoid soil contamination.
6.		Butyric and foul-smelling bottom layer.	(a) Crop too wet (b) Poor drainage from stack.	(a) Wilt, avoid excessive rain. (b) Improve drainage from stack.

Source: NSW Agriculture (1997)

9.A2

Spoilage losses with baled silage – likely causes and solutions

	PROBLEM	LIKELY CAUSE	SOLUTION
	Mould growth patches on surface of bale.	Air entering at site of hole.	Patch holes as soon as detected, using proper silage tape.
		Air entering hole over extended period. Much greater surface area affected. Holes not noticed or patched; if patched, incorrect tape used or incorrectly applied.	Inspect bales more frequently and carefully for signs of damage.
	Mould around bale & ~1-5cm depth.	Baler left outside of bale 'fluffy'.	Reduce excessive turning of the bale in chamber before ejecting. Use net wrap instead of twine.
		Plastic starting to break down or seal damage.	Check plastic: is it cracking/splitting off?
		Tackifier not fully effective. Layers not sticking together tightly.	Possibly faulty stretchwrapping – discuss problem with the supplier.
		Wrapper underlapping regularly or conical shaped bales cause underlapping.	Correct overlap on wrapper (50% overlap, 55% stretch). Tight, even-shaped bales, with very slight barrel shape.
	Mould around outside of bale and ~5-20+cm depth, often rotten layer on outside.	Plastic seal damaged.	Check regularly and repair holes.
		Plastic severely breaking down (UV light) or damaged in a number of places.	Ensure plastic has UV stabiliser incorporated.
		Plastic over-stretched when applied.	Check pre-stretcher – 55% stretch only.
		Not enough plastic applied.	Essential to apply 4 layers all over.
	Unpleasant odour, moisture under plastic and in outer 5-20+cm, often slimy, but warm/hot. Common in cereal bales & rank, dry pastures.	Air penetrating bale rapidly.	Bale less mature forage or at lower DM.
		Bale density too low.	Bale more tightly.
	Mould throughout most of bale. Musty odour.	Air entering the bale for extended period. Not properly sealed or seal broken early in storage period.	Avoid baling over-dry or stemmy crops. Ensure adequate bale density. Seal correctly, check regularly for holes.
		Bale stored too long, e.g. >12 months. Plastic starting to break down.	Use within 12 months, or use more layers/ or thicker wrap for longer storage period.

	PROBLEM	LIKELY CAUSE	SOLUTION
	Mould in centre of bale or rotten pockets inside bale	Air in centre of bale.	Loosely baled with early model fixed-chamber baler. Bale spiked in middle when transported.
		Soil or manure picked up at baling.	Avoid contamination.
		Dead plant material picked up at baling.	Graze or slash well ahead of harvest period.
	Dark brown coloured silage, possibly with black charring – no mould, pleasant odour.	Too much air in bale at wrapping	Avoid delayed sealing or wrapping, or wrapping too dry.
	Bale slumped, mould throughout	Baled too loosely. Bale density low.	Bale more tightly, regularly adjust bale chamber.
	Bale severely slumped, very unpleasant odour, wet, often water in bottom, no holes	Baled too wet.	Bale at 35-50% DM. Use tedder, etc, to increase drying rate.
		a) Driest part ,more pleasant & palatable. b) Very damp/wet, unpleasant odour, will be eaten. c) Possibly rotten, slimy, very strong unpleasant odour, often not eaten.	
	Plastic breaking down 1 layer at a time, from outside.	Heat degradation due to faulty manufacture.	Rewrap or protect bales from heat with a cover (be aware of rodents under covered area). Feed out before silage deterioration begins.
	Plastic breaking down 3-4 layers at a time	UV breakdown due to lack of UV light inhibitor.	Manufacturing problem. Low UV inhibitor in some imported films.