

CASE STUDY



Constructing silage pits for storing fodder reserves

Snapshot

Producer:

Alistair Donaldson (pictured)
'Willala', Boggabri
15kms south west of Boggabri

Area:

1,800ha
Mixed farming enterprise,
beef cattle and cropping



Background

Alistair Donaldson's forward-thinking and his philosophy of having a long term insurance plan for the future certainly helped his farming enterprise survive the recent drought.

His drought management strategy involved creating a fodder reserve by growing and baling a cereal crop which he then stored as silage in an underground pit. This cache could then be used to feed stock in the future when dry conditions and lack of feed created the need for supplementary feeding of his cattle.

What was involved

In 2007 Alistair planted 50 ha of triticale for the purpose of creating silage. He applied extra fertiliser to achieve the best productivity from the crop and he cut it before it reached the milky soft dough stage, which maximised the nutritional value of the silage.

The crop was cut and baled into large square bales (6' x 3' x 4'). Alistair chose this size for ease of handling and storage and also for the fact that it could be easily cut and baled by a contractor using standard haymaking equipment. The crop produced 480 bales, each weighing 830 kg and creating approximately 400 tonnes of silage in total.

Alistair was careful to avoid cutting the crop inside the recommended withholding periods for any chemicals used on the crop (such as herbicides or fungicides), as it would later be used to feed livestock.

The silage pit was built using an excavator into the side of a small hill. The location of the pit was chosen for the slope with a fall of about 50 cm in the gradient which allowed for self-drainage.

The pit was constructed with sheer walls measuring 6 m in width and approximately 70 m in depth. Alistair began filling the pit with bales, working forward from the rear stacking three wide and four high so that each face had 12 bales. Compaction at this stage was important as it removed any air spaces between the bales.

Plastic was laid down the sides and across the top of the bales with the bottom left free. The pit was backfilled with 50 cm of soil placed over the top of the plastic.

The area was fenced off to prevent livestock from accessing the site. Over the following years, some monitoring and maintenance were required, mainly backfilling where subsidence had revealed the plastic below to ensure that air had a limited capacity to make its way through to the silage.

As drought conditions worsened in 2018, Alistair made the decision to open the pit as winter was approaching and, with his cows beginning to calve, it would be the most beneficial time to access the stored fodder.

He found that overall the quality of silage was good after 11 years of storage, although there was some spoilage towards the bottom end of the pit where effluent had not been able to drain correctly. To remedy that in the future, Alistair felt it would be good to make changes to the design of the pit, creating a better drainage system for effluent and ensuring that the outlet was not blocked when backfilling the pit.

Alistair was able to feed between 180 and 200 cows that were calving for approximately three months. He fed them in a confined feeding paddock and used all of the silage that had been stored in one go rather than reclosing the pit once it was open.

Benefits

Having a fodder reserve for feeding livestock during a drought can help keep an enterprise in production. It helps by providing feed for core breeding cows and allows the producer to preserve the genetics of a herd.

Silage pits are low maintenance and a cost-effective way of providing long term storage that is both fire and rodent proof.

By feeding the silage to stock in a confined area, this helps maintain pastures and ground cover, preserving this important asset for the long term productivity of the enterprise.

Summary

Fodder conservation using silage pits can be an expensive outlay initially, but the benefits of having a reserve of silage available when feed is scarce and hard to source off-farm during a drought can be a sound long term investment for the future.

Further information

George Truman | Land Services Officer - Mixed Farming Systems
0427 505 040



NORTH WEST LOCAL LAND SERVICES

T: 1300 795 299 | E: admin.northwest@lls.nsw.gov.au
www.lls.nsw.gov.au/regions/north-west



Key learning and advice

Consider withholding periods for livestock as recommended for chemicals applied to the crop before cutting and storing.

Design for drainage of effluent when building a silage pit is important.

Select a site that allows for drainage, soil that won't collapse and has no seepage from underground water.

Look for opportunities to reuse the pit in the future, such as when salvaging a crop that has been affected by frost.

