

SAFE USE OF TYRES FOR FODDER CONSERVATION ON AUSTRALIAN DAIRY FARMS

Waste tyres can be a useful material on-farm, in particular for the production of conserved fodder. Production of silage is a convenient and cost-effective way to conserve fodder and ensure it's available as needed year-round.

However, recent fires across Australia have highlighted the need to ensure that tyres are stored and used safely on farm, and state environment protection authorities are turning their focus to ensure that this happens. It's important all dairy farms follow published guidance to ensure safe practice and compliance.

This document provides a brief overview of silage production, with links to best-practice resources, as well as links to all jurisdiction's regulators, so that dairy businesses are adequately considering their risks and can ensure their own practices are meeting requirements.

Use of conserved forage

Conserved forage is required on the vast majority of dairy farms at various stages of the year and is considered standard practice both in Australia and in many regions around the world. Conserved forage is used in both grazing systems, where there are periods of time when there is insufficient grazed pasture available to meet herd demand, as well as in more intensive systems such as Total and Partial Mixed Ration systems, to ensure sufficient levels of forage in animal diets throughout the year.

Most of the conserved forage used on Australian dairy farms is ensiled, with crops like ryegrass and maize particularly popular as silage options. An anaerobic environment where there is total elimination of air is a critical requirement to conserve fodder as silage. While some ryegrass silage can be conserved in round bales sealed with plastic wrapping, many farmers also use stacks or pits to conserve fodder under a sealed plastic cover.

Sealing the stack

There are several industry best practice recommendations around sealing of silage stacks in Australia. These best management practices are based around significant cross-sector and interstate research collaborations over several years, and are summarised collectively in the Successful Silage manual, which also forms the basis of Dairy Australia's Top Fodder Silage course, offered to farmers and industry service providers to promote the conservation of high-quality silage. Both of these guides are accessible through the **Dairy Australia website**. The guidelines consistently emphasise the importance of compaction when sealing a silage pit/stack. For many years in Australia, the use of tyres on top of silage stacks to weigh down the plastic covering has been widespread and common. It is current industry best practice to minimise the amount of air seeping underneath the plastic to optimise fermentation and prevent deterioration. Waste tyres are a key component of an efficient fodder conservation system where silage stacks are used. Tyres are normally reused for many years, provided they are stored and handled correctly.

Figure 1 An example of a well compacted silage stack covered with tyres



Safe storage of tyres

Tyres need to be stored for a period (usually a few months) while the silage stack is opened and used, and before being reused the next time a silage stack/pit is created on the farm. It is important to ensure that tyres are stored safely to manage risks. Each state's fire authorities has guidelines for the safe storage of tyres. These are listed below where available, otherwise contact your local authority directly for advice.

These guidelines generally include the following:

- Tyres should be stored on a level site away from surface watercourses, flood zones and groundwater recharge points.
- Ensure that the fire risk is minimised by removing any vegetation on the storage site via mowing or spraying the site prior to storage and maintain this practice regularly when storing tyres during summer months when the fire risk is greater.
- Maintain a clear distance of at least 5–10m around the tyre storage site from all directions to minimise the risk of any potential fire spreading. Avoid storing tyres directly against an area of bush/overgrowth where possible.
- Do not store tyres under electric power lines, or near any other potential sources of ignition that may be present on the farm, such as flammable or combustible liquids or other sources of heat or ignition.
- The tyre storage site should be securely fenced and have access gates wide enough to allow the entry of emergency vehicles.
- Do not stack tyres too high in a storage pile – it can be unstable and create a safety hazard for farm workers and visitors.



In addition, most states have specific regulations regarding the numbers and storage of tyres on farm. These regulations aim to mitigate risks associated with use and storage, with the biggest risk being fire. Depending on your location and the number of tyres that you have on-site, a license may be required to store tyres. **Failure to manage tyres in line with state environmental regulations can result in severe penalties, including fines and notices requiring tyres to be removed at significant cost.**

Want to know more?

Your state regulator will be able to provide more information on local requirements to ensure your tyres are stored safely and in compliance with local regulations. Key organisations and documents are listed in the links below.

National

Tyre Stewardship Australia

Victoria

EPA Victoria publication 1652: *Using waste tyres on farms and other private property*

EPA Victoria publication 1667.2: *Management and storage of combustible recyclable and waste materials*

EPA Victoria publication IWRG641.1: *Farm waste management*

MFB/CFA: **FIRE SERVICES GUIDELINE Open Air Storage of New or Used Tyres**

NSW

NSW EPA: *Waste Tyres*

Fire and Rescue NSW: Fire & Rescue NSW (2014), Fire Safety Guideline: *Guidelines for Bulk Storage of Rubber Tyres, December 2014*

South Australia

EPA SA: *Waste Guidelines – Waste Tyres*

South Australia Fire Authorities: **BUILT ENVIRONS SECTION GUIDELINE NO. 13 General Guidelines for Rubber Tyre Storage**

Tasmania

EPA Tasmania: *Approved Management Method for the Storage and Reuse of Waste Tyres*

Western Australia

Waste Authority: *Tyres (Used) and Waste: Used tyres present some major waste challenges*

Queensland

Department of Environment and Science: *End of Waste Code End-of-Life Tyres (ENEW07503018) Waste Reduction and Recycling Act 2011*