Silage is a valuable part of many dairy feeding systems in the region to fill feed gaps, or as a year-round forage component to increase milk production. Forage can be conserved specifically as a stored forage source, at times of peak pasture growth; to take advantage of seasonal rainfall; and as part of the grazing rotation to manage pasture quality.

Which forages?

The best forage for your system is dependant on what you can grow and how much of it you need.

Maize is a premium silage crop for dairy cattle; it produces a large bulk of forage—20–25 t dry matter (DM)/ha is achievable—with good starch levels (30–40% starch) for higher milk production.

Grain sorghum, forage sorghum, and barley are more suitable when water supply is limited.

Any excess pastures or forage crops can be ensiled to preserve feed quality and to reduce wastage.

Best time to harvest?

The best stage for harvest is usually a compromise between quality and DM yield. For each crop, there are recommended growth stages for harvesting.

Maize: Ideal harvest time is at milk line score (MLS) 2.5 (Photo 1). MLS varies from 0 (no visible milk line at the tip of the kernel) to 5 (brown layer forms across the milk line or base of the kernel). Grain sorghum, forage sorghum and barley should be harvested for silage when the grain is at milky-dough stage.

Recommended dry matter content of forages for pit silage is 30–35% DM. (Refer to the Top fodder manual.)

The ensiling process

Ensiling is a process whereby sugars within forages are fermented by bacteria to produce acids, which reduces the pH of the forage and preserves the forage.

Use an inoculant to promote rapid fermentation and reduce aerobic spoilage.

Chop length should be uniform and approx. 19 mm for maize (Photo 2) and barley and 5–10 mm for sorghum.

Correct chop length allows better silage preservation, better compaction, and reduced losses in fermentation and storage. It can also directly improve milk production through increased intake and reduced sorting.

Process grain-based silages to crack the grain, particularly corn and sorghum, for better starch utilisation and minimal grain loss in manure.

Make sure silage is sealed and compacted to eliminate air and to reduce losses during fermentation and storage.
**Pit silage basics**

Pits need to be rolled, compacted and sealed each day of harvest to eliminate air.

A finer chop will make pit silage easier to compact.

Seal pits as soon as possible—ideally within 24 hours; silage plastic is the most common sealant, with tyres or truck tyre walls to weigh down and seal the plastic (Photo 3).

![A silage bun with tyres completely covering it to eliminate the air and seal the bun for good fermentation.](image)

**Baled and wrapped silage basics**

Aim for high-density bales to minimise air pockets.

Wrap bales immediately after baling and use four layers of silage wrap, with 50% overlap.

Store where no damage can occur to the plastic and prevent birds from creating holes.

Patch up holes straight away; even small holes can deteriorate silage quickly (Photo 4).

![A round bale that has been spoiled and gone mouldy due to holes in the plastic wrap.](image)

**Feeding out**

Ensile forage for at least 17 days before feeding out.

Minimise disturbance of the silage face to minimise air penetration and to avoid fungal contamination. Aim to leave the silage face even and perpendicular to the walls and floor. Clean away any loose feed every day. Including as little as 5% spoiled feed in a ration can depress intake and reduce diet quality.

Minimise wastage in the feedout process with suitable equipment and troughs (Photo 5). Allow 0.7 m of trough space per cow.

![A round bale that has been spoiled and gone mouldy due to holes in the plastic wrap.](image)

**Balancing silage rations**

Test silage for nutrient and DM content on a regular basis (monthly) and balance the diet to achieve the optimum milk production from conserved forage.

Well-made conserved forages contribute energy, fibre and protein. Cereal crop silages are an alternate source of starch to improve milk yield and milk protein.

**Further information**

Contact the DAFF Customer Service Centre by Phone 13 25 23, or Email [callweb@daff.qld.gov.au](mailto:callweb@daff.qld.gov.au)

More technical notes can be found at: [www.dairyinfo.biz](http://www.dairyinfo.biz)

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