



Food and Agriculture  
Organization of the  
United Nations

**Tips**

for

**smallholder**

**silage-making**

## **Impress**

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In farming, being prepared for difficult times is essential. One of the things a *smallholder* livestock farmer can do is to prepare enough animal feed for the dry or cold season. You can turn forage into silage to make sure you have enough high-quality feed the whole year round. The tips that you will find here will assist you in small-scale silage-making.

**Tip:** Note that any farmer can make silage, whether you are a large-scale farmer or a *smallholder*.

**Tip:** Well prepared silage is high-quality animal feed and will increase your production and the health of your animals.

## Ingredients for silage

- grass
- maize, millet, oats, sorghum
- alfalfa (Lucerne) and clovers
- fruit and other crop waste products
- molasses
- other local crops
- a combination of these

## Steps in silage-making

- Build silo(s).
- Harvest and chop the forage.
- Dry the forage.
- Fill the silo and compact.
- Cover the silo.

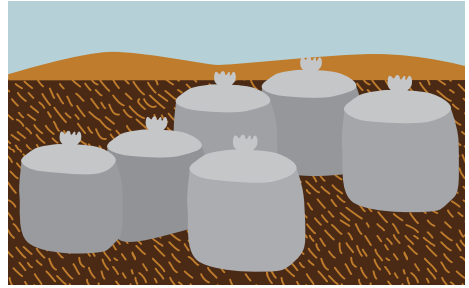
**Tip:** Molasses can help to speed up the silage fermentation and increase feed intake, as it improves the taste and smell of the silage.



## Containers and bags as silos

Containers and bags that hold up to 200 litres can be very effective silos. It is essential to pack the forage tightly.

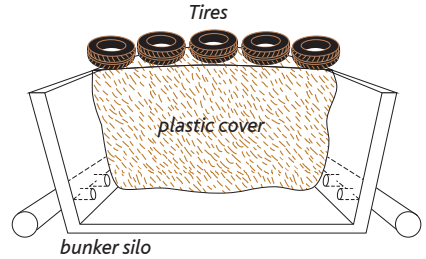
*Stack, trench or bunker silos* are bigger silos with or without walls and can be above- or underground. They need to be tightly covered.



*Using bags and a drum for silage making*

**Tip:** Build your silo on a firm base away from trees, water sources, houses and drains, and ensure that there is sufficient drainage.

**Tip:** Consider using several silos instead of only one to spread the risk of silage going bad.



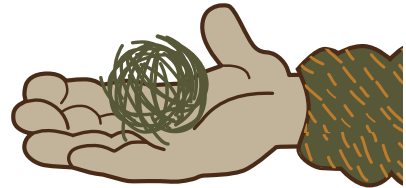
*Stack silo, trench silo*

## Harvest at the right time

The quality of the forage is better in spring and autumn. Legumes should be harvested when the legumes reach the 10 percent bloom stage. Maize should be harvested when the grain is about three-quarters yellow.

**Tip:** Harvest grass when it's between 20 and 30 cm tall (longer than two fists and a thumb).

**Tip:** Mow in the afternoon (when forage contains more sugars).



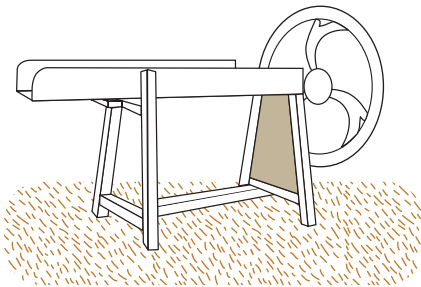
*Ball method to judge water content*

## Dry the forage

Before making silage, dry the forage to a certain degree. Proper water percentage is essential to produce high-quality silage. To judge this, you can use the *ball method*:

- Take a handful of chopped forage.
- Squeeze it into a ball for 20 to 30 seconds.
- Release.

If the palm of your hand feels a *bit moist* afterward, and the fodder *slowly falls apart*, then the fodder is ready for silage.



*Forage chopper*

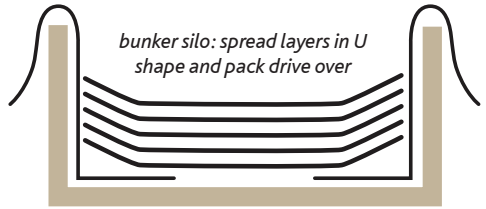
## Chop the forage

Chop at a length of between 2 and 4 cm; older crops can be cut a little shorter, while younger forage can be cut a little longer.

## Fill the silo

The silo needs to be filled and compacted as quickly as possible. Put the forage at the beginning of the silo and spread the material in a thin layer (max 15 cm) throughout the silo, then compact it before putting in the next layer.

**Tip:** Before you start filling the silo, spread the plastic on the outer edge of the floor and the walls in the silo and let it hang over the sides.



*Preparing the cover before filling*

## Compact the silage

Compacting is key to making top-quality silage. To compact, you can use:

- weight of humans or stones;
- barrels filled with water or sand;
- vehicles like tractors;
- livestock;
- any other heavy object.

*Compacting silage with a drum*



## Cover the silage

The silo must be covered immediately, e.g. by a plastic sheet. Weigh it down firmly with tyres or bags of sand.

**Tip:** Keep checking the silo for damage to the cover or for hot silage; heating means that air is coming in, which will affect the quality of your silage.

## When is the silage ready?

Silage should be ready after two months, although 60 to 70 days produces optimum fermentation.

## Check the quality

Before you feed the silage to your animals, evaluate the silage. If you notice rot, mould, a foul smell or soil residues, don't feed the silage to your animals.

**Tip:** The silage should smell pleasantly acidic, like the smell of sour milk or yoghurt.

## Opening and closing the silo

Try to open only the part of the silo that you will use in about three or four days and cover as best as possible between feedings.

**Tip:** Silage has a high nutrient content, and you should give it to your best animals first.

**Tip:** Cows might need a bit of time before they eat silage because of the smell. You can add some molasses or concentrates to the silage to stimulate eating.

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