



Department of Agriculture  
**PHILIPPINE CARABAO CENTER**  
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# iASK

innovative answers • solutions • knowledge

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## SILAGE-MAKING AS A STEADY SOURCE OF FEEDSTUFF FOR DAIRY BUFFALO

Silage is a kind of fermented feedstuff for carabaos or cattle stored in an air-tight container. The process of preparing this is called 'ensiling', while its container is called a 'silo'. All kinds of grasses and left-over field crops can be processed as silage.

**The provision of sufficient and nutritious feedstuff is one of the most important practices in dairy buffalo management. However, it is usually a challenge for farmers, especially during the summer season when the source of nutritious forage or grass is limited.**

In cases like this, making silage from corn, napier, sorghum and other grasses or food crops helps.

Silage making will ensure adequate and proper nutrition for carabaos regardless of weather conditions. It also ensures high income for dairy carabao farmers.

# Silage Making

- Can be done anytime
- Can be done manually or with the use of a machine (forage chopper)
- Can be done in bulk or in small quantities
- Can keep for a longer period
- Is relatively cheap

## Grasses or feedstuff which can be prepared as silage:

### 1. Feedstuff with high energy content

- Napier, Paragrass, Guinea grass, corn, sorghum, and others
- Farm by-products such as rice-straw and left-overs from harvesting corn and sugar cane

### 2. Feedstuff with high protein content

- Legumes: ipil-ipil, kakawate, Moringa, mani-manihan, Centrosema, Rensoni, Stylo, and others
- Feedstuff from industrial companies or processing plants: spent grain, banana or pineapple peel

## Needed materials for the preparation of silage

1. Containers such as drum, plastic bag or pit
2. Heavy items for pressing the silage such as rubber tires, woods, hollow blocks and others
3. Grass or feedstuff which has 65-70 percent moisture content

4. Forage chopper or bolo knife

5. A trailer to carry grass and people who will help make the silage

## Procedures in Silage Making

1. Calculate the bulk or quantity of grass that will be processed as silage based on the daily needs of the animal. Determine when and how long it will be provided to the animal.

Example:

-Animal Weight: 500kg

-Feedstuff needed by the animal per day: 10 percent of its weight

-Quantity of grass needed by the animal per day:  $500\text{kg} \times 0.10 = 50\text{kg}$

-Duration of summer season where there is insufficient source of grass: six months (January to June or 180 days)

Quantity of needed silage:  $50\text{kg grass/day} \times 180\text{ days} = 9,000\text{ kg}$

A farmer can harvest 20,000 kg to 30,000 kg of fresh grass from a hectare of corn that is 75-80 days old.

To meet the needed feedstuff requirement of one animal during the summer season (six months), the farmer needs to have the following:

- Land area= 0.5 hectare
- Dimension of pit silo: 1m height x 3m width x 10m length = 30 sq m<sup>2</sup> or
- 500 pieces plastic bag with capacity of about 20kg to 30kg each

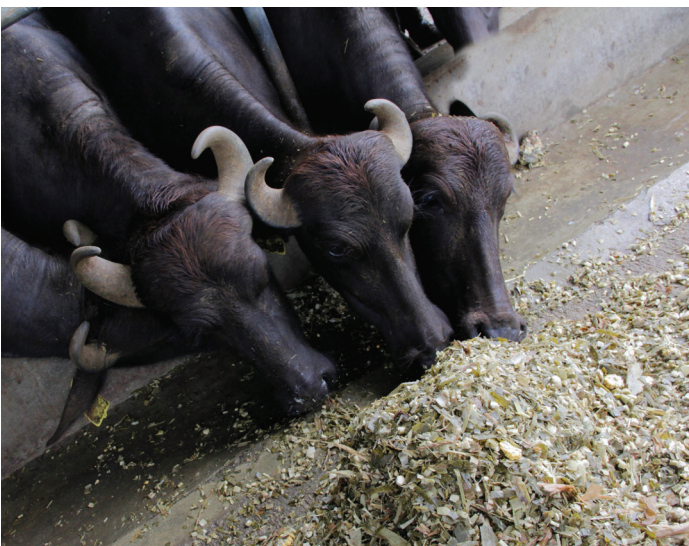
2. Organize a group that will be engaged in silage-making and discuss when it will be done.
3. Prepare the needed materials such as silo, bolo knife or chopper, plastic, and others.
4. Harvest the grass (45-55 days from planting) or corn (75-80 days from planting).
5. Estimate the moisture content of the grass. If the grass is wet (water is more than 70%), dry it 1-2 days before collecting or chopping.
6. Chop the grass at 1-2 cm length using chopper or bolo knife.
7. Fill the silo quickly.
8. Compress the grass in the silo to remove air. When using plastic bag as silo, a vacuum cleaner can help remove air from it. Be careful not to puncture the plastic bag.
9. Stack the silage properly and seal the silo completely to avoid air or water entry. Press it with a heavy material.
10. After three weeks, the silage can already be fed to animals aged six months or older.



## Important Reminders!

Once a plastic bag silo is opened, make sure that silage is fed continuously to the animals until it is all consumed. In a pit or bunker silo, always put back its cover each time silage is removed from it to prevent spoilage.

**Keywords:** silo, ensiling, silage-making, corn silage



# PRICE PER KILO OF CORN SILAGE

(Based on 2014 actual prices)

EXPENSES	NEEDED ITEMS		PRICE
A. Expenses in corn planting	Quantity	Unit	(Php)
1. Corn Seed	2	sack/bag	9,400
2. Land Preparation	1 time	machine/ person-days	3,000
3. Corn planting (contract per hectare)	15	person-days	2,250
4. Fertilizer	2 times		
Wages for laborer	12	person-days	1,800
Triple 14 (14-14-14)	5	sack/bag	5,400
Urea	2	sack/bag	1,840
0-0-60	2	sack/bag	2,700
5. Irrigation	6 times		
Wages for laborer	12	person-days	1,800
Oil	100	liter	4,240
6. Off-barring	1	machine/ person-days	1,500
7. Weed Control			
Wages for laborer	2	person-days	300
Herbicides	2	liter	735
<b>B. Expenses in silage-making</b>			
8. Gas for chopper	20	liter	700
9. Harvesting	10	person-days or one machine	1,500
10. Plastic cover	10	kilo	900
11. Silo (plastic)	40	piece	15,000
12. Wages for laborer	6	person-days	4,500
13. Other expenses			1,000
<b>C. Total expenses</b>			<b>58,565</b>
<b>D. Corn yield per hectare</b>	<b>30</b>	<b>tons</b>	
<b>E. Price of corn silage per kilo</b>			<b>1.84</b>

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**ABOUT THE MATERIAL**

iASK, an acronym for innovative answers, solutions, and knowledge, is a knowledge product series packaged and produced by the Philippine Carabao Center with the Southeast Asian Regional Center for Graduate Study and Research in Agriculture. This iASK issue specifically aims to help dairy farmers ensure a steady source of feedstuff for their buffaloes.

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