Theme 2: Forage conservation

MAKING UREA/MOLASSES/MINERAL LICK

(Level 1)

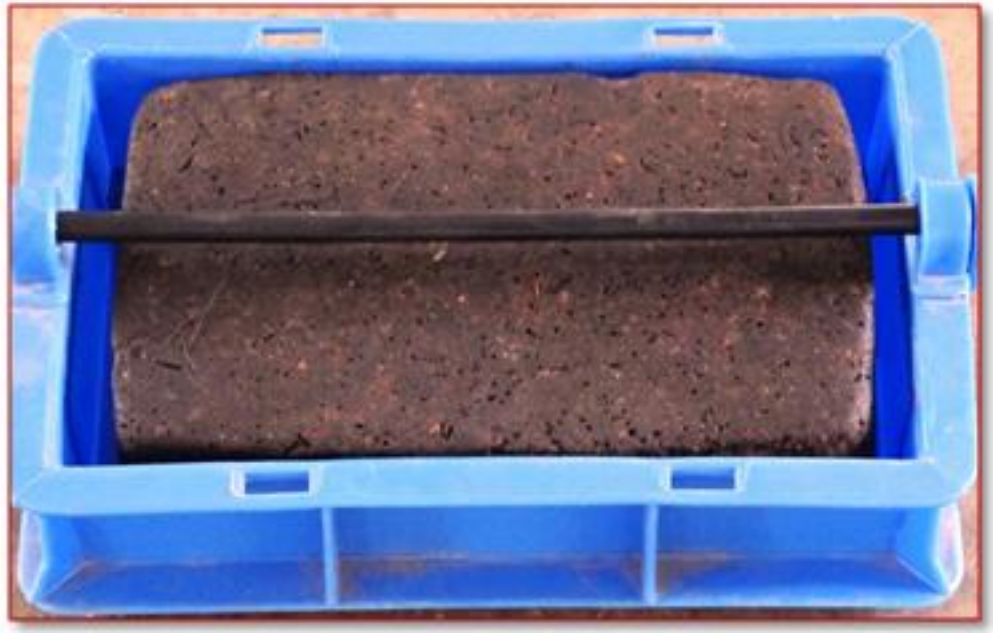
Topic	Training & information Content
2.1	Fodder conservation and storage
2.2	Estimating ideal time of harvesting
2.3	Guideline for silage making
2.4	Fermentation process in silage
2.5	Treatment of straw with Urea
2.6	Making of urea/molasses/mineral lick
2.7	Management of silage pit (feed out)
2.8	Estimating fodder supplies for dry season feeding & planning of feeding management

1. You will learn about (learning objectives):

- ❑ How to identify molasses urea mineral block.
- ❑ How to make molasses urea mineral block.
- ❑ Know the importance of molasses urea mineral block.

2. Introduction

- Molasses urea mineral block (MUMBs) can be one way to supplement dairy cows on low quality forages.
- The molasses urea mineral block can be readily bought or mixed on farm using ingredients.



3. Ingredients

Molasses

Urea

Minerals

Molasses urea mineral block (MUMBs)

(a lick block with molasses, urea, minerals, vitamins and other multi-nutrients).

4. Molasses urea mineral block (MUMB)

- To make a 100 kg MUMB (sufficient for 25 – 30 blocks of 3.5 - 4 kg each) you will need:
  - Molasses - 38 kg (38% as fed)
  - Urea - 12 kg (12% as fed)
  - Mineral mixture/DCP/bone meal - 2 kg (2% as fed)
  - Salt - 3 kg (3% as fed)
  - Cement - 13 kg (13% as fed)
  - Agricultural by products (wheat bran/maize bran) - 32 kg (32% as fed)

- You also need a wooden frame to shape the MUMB.
- Wooden frame dimensions are 10 cm x 20 cm x 5 cm.

4.1 Why the ingredients are used

1. Water

- Used as the main solvent to facilitate even mixing of ingredients.

2. Agricultural by-products

- Added to increase nutritive value of the block especially cereal brans.

Wheat bran

3. Clay

- Works as a pH buffer as it helps reduce sub-clinical ruminal acidosis. It is also known to reduce aflatoxin toxicity.

4. Salt, lime/cement

- They provide macro mineral needed by the cow.
- Cement/quick lime is used as a binding agent/holds the block in shape and makes it hard for easier licking by cows.

4.2 Procedure for making molasses urea mineral block (MUMB)

- Pour molasses in a trough and add 1-3% water if it is too dry and mix evenly.
- Add urea and mix until it dissolves completely.
- Add mineral mixture and salt while stirring evenly.
- Add cement to the uniform mixture and mix until the paste solution is evenly mixed together.
- Finally add the agricultural by product of choice (e.g. wheat bran) and mix evenly.
- Place the evenly mixed paste into the wooden frame giving it a rectangular shape.
- Allow the block to dry in open air under a shade for 3-4 days before feeding to animals.

4.3 Feeding molasses urea mineral liquid and blocks

- Molasses urea mineral liquid/block should not be fed alone. A minimum roughage amount is needed.
- Avoid feeding urea molasses mineral liquid & block to young calves.
- Introduce the feed gradually within 1-2 weeks.
- Recommended quantities of urea molasses mixture to feed per cow per day:
  - Large cows (more than 400 Kg) - 2 kg
  - Small cows (less than 400 Kg) - 1 kg

  If provided as a block, a mature dairy animal will consume (lick) up to 0.5 kg per day.

4.4 Advantages of molasses urea mineral blocks

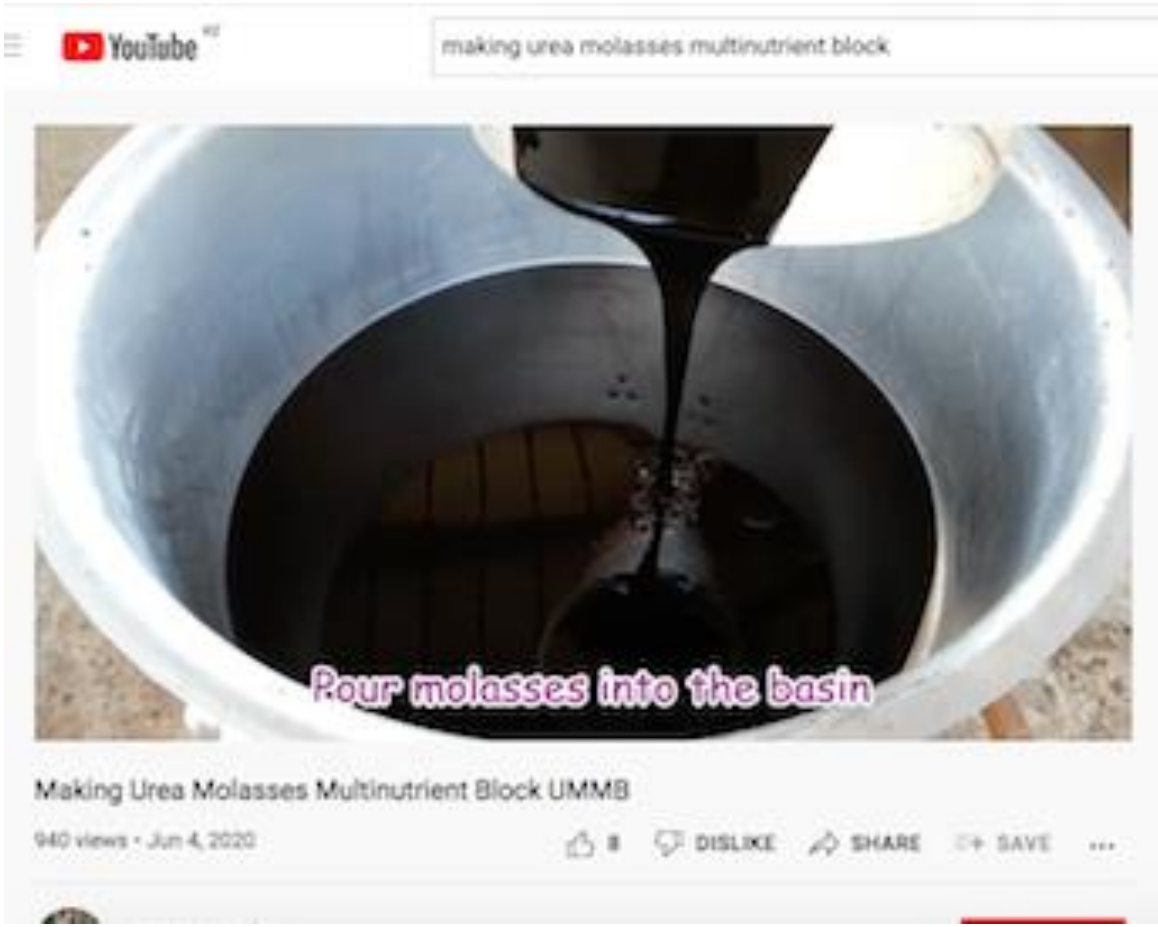
- MUMBs;

i. supplements deficient nutrients in the main feed for cows.
ii. are easy to transport and store.
iii. are cost-effective
iv. urea molasses mineral liquid/block has reduced toxicity compared to sprinkling urea in drinking water.
v. increase milk productivity and reproductive efficiency in dairy cows.

5. Summary

Making molasses/urea/mineral block

Watch video:
https://www.youtube.com/watch?v=wf0hT1SJkl0



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