

Using Urea Treated Stover to Make Livestock Fodder



Using the feed presented in this document has improved capacity to help farmers increase their livestock resilience, and ultimately:

- Improve livestock`s weight
- Increase chances of calving
- Ensure strength for the next farming season
- Enhance potential for better selling price



Background

ZRBF-ECRIMS targets at risk households in the geographical regions IV & V. whose livestock's pastures are only available and nutritious during the rain season. The pasture and livestock condition deteriorate as the season approaches winter. This leaves the animals vulnerable losing weight, fetching low market prices, not strong enough to provide draught power.

Also, research findings point out that 80% of a livestock producer's cost goes towards feed procurement. This ultimately threatens a farmer's resilience capacity.

Given this background, the ZRBF ECRIMS Project launched livestock resilience intervention that encompass fodder making in the region. This also provides farmers an alternative way of reducing the capital cost on supplementary survival feed to at least 30-40% so as to improve his/her resilience capacity.

Through these interventions farmers can adopt locally available resources to make fodder which can be fed to their livestock.

SECTION I

HOW TO MAKE FODDER USING UREA TREATED STOVER

Urea treated stover offer a low cost alternative feed that can sustain a farmer`s cattle when pastures run dry. The feed is formulated using readily available crop stover harvested from maize, sorghum, and pearl millet. This feed comes in handy during the month of August, September and October when most cattle start to shed weight. By adopting such fodder, a farmer can enhance his chances to save his cattle from poverty deaths, increase his/her animals` calving probability in addition also to increasing his/her potential to fetch better market selling prices when selling his/her livestock.

Benefits of Urea Treated Stover

- Promotes weight gaining and maintainance for improved livestock well-being
- Maximizes usage of harvested crop residue for the strenthening of a farmer`s resilience
- Supports healthy animal growth
- Helps improve calving probability
- Saves the farmer on money spent on supplimentary survival feeds

Urea treated stover can do two important things:

1. Help enhance livestock weight and as well as health and well being for productivity
2. Provides a farmer with a sustainable and low cost feed to cushion his livestock

THE PROCESS

Materials

- Machette
- Stirring stick
- Watering can
- Spade/shovel
- Polythene plastic sheets
- Space/pit for the fodder pit (approximately 4 meters long by 2 meter wide by 1 meter deep)
- Space to chop stover and mix urea with molasses and water
- 200 liter plastic drum
- 20 liter plastic bucket
- Scale

Fodder Ingredients

- Crop Stover
- Ureas and Molasses
- Water

STEP BY STEP GUIDE TO MAKE 1000KGS OF UREA TREATED STOVER



- 1 Pick a location for the fodder pit:** Choose a site near the area where you will be feeding the fodder or close the livestock shelter. The area should be protected. It should be dry free from water logging and cleared. The location should be flat (around 2% gradient). The site should also be close to the stover for easy of transportation. The location should be approximately 600sqm

The area should not be close to livestock watering points

- 2 Construct fodder pit:** Dig a fodder pit that is 2 meter wide by 4 meters long by 1 meter depth. The pit should be beveled at one side to allow easy entrance. Leave for four days to dry before usage begins

- 3 Gather stover :** Collect 1000kgs of maturely dry crop (mashanga/amahlanga) from your field after harvesting preferably may to july. This stover can be of maize, sorghum, pearl millet, grass or banner hay.

This stover can be gathered in may and be used later in July. It should be stored on an elevated platform far from the reach of animals

- 4 Chop the stover for processing:** Use a machette to chop the stover into smaller sizes of 5cm or matchbox sizes. Alternatively one can use a haymill to grind the stover smaller sizes ready for the processing.

The fodder should be chopped close to the fodder pit and should be chopped onto a tent or plastic to avoid direct contact with the ground and contamination

- 5 Gather processing materials:** The farmer should gather the following items:

- 200 liter plastic drum (without water)
- 50kgs of Urea
- 30kgs of Molasses
- 2 Stirring sticks
- 4 by 20 liter plastic buckets (without water)
- Collect 400 liters of water
- Watering can with rose or a sprinkling utensil
- Scale
- Polythene plastic (5m x 3m)
- Pick and shovel
- 5 liter bucket



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Cover the inside of the pit with a 5m x 3m polythene plastic sheet: The farmer should lay a plastic polythene sheet right round the inside of the fodder pit making sure that it is air-tight, tightly fixated to the edges

The farmer should make sure the plastic is not damaged. Shoes with metal spikes should not be used to step on the plastic



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Create Urea Solution: Open the 50kg bag of Urea and take 5kgs of Urea. Pour 20 liters of water into a 20 liter plastic bucket and add the 5kgs of Urea then stir until all Urea granuals are completely dissolved. Spit the solution into equal portions by pouring into another 20-liter bucket Put these two buckets aside and proceed to step ---

**(Note that to avoid spillage, the solution is split into two 20 liter plastic buckets)*



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Create Molasses solution: Pour molasses into a into a 5 liter bucket and weigh it to 3kgs using the scale. Add 2-litres of waters into the 5-liter bucket and stir to mix the molasses and water for two minutes.



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Mix Urea & Molasses solutions: Pour the molasses solution into one of the 20 liter buckets containing Urea solution created in step 7 and stir the mixture for about 1 minute. Pour the solution into the other bucket containing urea solution back and forth for a minute. Then split the mixed urea and molasses solution into two equal portions between the two 20 litre buckets



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Put an empty 200 liter plastic drum into the pit: Carefully put a 200 liter plastic drum (upright) into the fodder pit. Add 200 liters of water into the drum and close the drum firmly.



STEP 11



STEP 12



STEP 13



STEP 14



STEP 15



STEP 16

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Weigh and spread 50kgs of stover into the pit:

Fill 10 x 50kg sacks with the chopped stover and deposit it into the fodder pit. It should be spread stover evenly across the pit

**(Each 50kg sack filled with stover is equivalent to 5kgs weight)
The farmer should deposit 10 of these sacks into the pit)*

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Compress the layer of stover using the water filled drum:

Carefully place the 200 liter plastic drum horizontally on top of the spread-out stover and roll it 4-5 times per side to remove all air pockets until fully compressed.

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Sprinkle one part of the Urea & Molasses solution over the stover:

Pour the entire urea & molasses solution from one of the buckets in stage --- into a watering can with a rose. Sprinkle this solution evenly over the stover in the pit

14

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15

Compress the layer of stover using the water filled drum:

Carefully place the 200 liter plastic drum horizontally on top of the spread-out stover and roll it 4-5 times per side to remove all air pockets until fully compressed.

16

Sprinkle one part of the Urea & Molasses solution over the stover:

Pour the entire urea & molasses solution from the second bucket remaining from step 9 into a watering can with a rose. Sprinkle this solution evenly over the stover in the pit

Repeat steps 7, 8, 9, 11, 12, 13, 14, 15, 16 until the pit is full and dome shaped



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Cover the pit tight using the overlaps of the polythene plastic: Take the overlap from one side and bring it to the centre of the pit, and compress all the air out. Repeat the same for the other sides. The corners should be folded similar to a book cover.

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Cover the polythene plastic with soil: Using a shovel, cover the polythene plastic fully with soil to prevent sun scorching

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Clear the site and remove all urea granules, wash utensils and hands thoroughly: Remove any Urea granules that might have fallen to the ground. Remove and clear the site of any products and materials used during the process. The site should be free from any traces

**(Urea is poisonous. Remove all remains of Urea from the site, cover all sites with spillages so that animals cannot lick)*

In case of suspected Urea poisoning, use 1:1 ratio of vinegar to molasses and drench (forcefully pour the solution down the animal's throat) the animal

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Leave the fodder to mature: Leave the fodder to mature over a period of 4 weeks in hot areas or 5 weeks in cold areas.

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Harvest: There are two ways of harvesting after the 4/5 weeks have elapsed.

Option One: Open the pit and remove the entire fodder placing it onto a tent spread on an open space that has good aeration and sunlight for 4 to 6 hours until the fodder is crisp. Then store it in a protected shade

Option Two: Alternatively feed directly from the pit. Remove only the required amount and tightly close the pit. Airate the harvested fodder for 30 minutes.

**(It is recommended to use feeding troughs or racks to avoid spillage)*.*

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Start feeding gradually: Start by providing small amount (e.g. 0.5kgs) per animal once per day until 2kgs per animal per day is reached. Feeding time depends on the farmer's routine, but it is recommended to have a specific feeding time. Only give the animals water after 25-30 minutes. Wait for 25-30 minutes after feeding before the animals drink water

**(depending on animal behaviour, group or individual feeding can be done. Don't put the feed on a damp area or where there is water. Avoid giving feed non-ruminants eg donkeys, pigs, and poultry)*

Do not give the animals water for 25-30 minutes after feeding them the fodder





Acknowledgments

This training manual has been made possible by the generous support of the Zimbabwe Resilience Building Fund (ZRBF) working through its Enhancing Community Resilience and Inclusive Market Systems (ECRIMS) Project which operates in Mberengwa and Zvishavane districts of the Midlands Province in Zimbabwe.

Technical support in the development of steps on fodder production was provided by Makoholi Research Institute working in collaboration with ZRBF-ECRIMS Project fields staff.

This document would also have not been possible without the support Agritex field staff who work closely with farmers across the targeted wards of operation in promoting livestock resilience through such fodder production interventions.

Special mentions go to:

Mr Zechias Mutiwasekwa (PFA) - ZRBF ECRIMS who coordinated the Urea Treatment of Stover for Livestock Fodder Production Across the Districts.

Ngonidzashe Munemo (Comms Officer) - ZRBF ECRIMS project who oversaw the writing and design of this training manual.

Mr Tongai Bonyongwe & Mr Calisto Gwatirisa of Makoholi Research Institute who provided technical support on fodder formulation and preservation across the ZRBF-ECRIMS Project