Hay Production Technique On-farm in Makueni County, Kenya

Technique definition

Growing fodder grasses in drylands for producing hay for livestock feeding under zero grazing system.

Purpose

- Improve feed availability.
- Avail quality grass pasture and seed stock.
- Farmland rehabilitation.
- Control soil erosion.
- Improve ground cover.
- Income generation.
- Adaptation technique to climate change.

Advantages

- Provides fodder for zero grazing animals.
- Reduces soil erosion.
- Improves soil ecosystem.
- Improved soil fertility through animal manure when they graze on-site.
- Requires less labour to establish.
- Improves pasture quality.
- Makes use of unproductive land.
- Generates income from sale of; baled pasture and grass seeds for livelihood improvement.
- Enables grass seed bulking.
- Requires limited technical expertise.

Disadvantages

- Prolonged drought often affects pasture growth and consequently productivity.
- Some grasses are susceptible to termite attack.
- Some grasses are difficult to introduce in new sites.
- There is danger of introducing invasive grass species.
- Seed collection and harvesting are time consuming and labour intensive.
- Seed being produced is not certified.

Procedure

- Prepare land using ox-plough depending on the type of grass available, state of the field, labour and implements available.
- Alternatively, general seed broadcasting on unploughed land can be done.
- Planted seed before the onset of the rains to ensure high germination.
- Cover the seeds lightly with soil.

- Open fields may be ideal for species such as bush rye (*Enteropogon machrostachyus),* which needs to be established on land with already existing vegetation.
- Harvest seeds when most (over 60%) of the seed heads of a given type of grass have reached maturity by turning golden brown, taking care not to let seed dry in the field.
- For hay, the grass should be harvested before seed production when the grass is still tender and has a lot of nutrients.
- Grass should be dried in the shade to maintain the greenish colour and nutrients.
- Use a hay box measuring 1.25 × 1.25 × 2 ft, open on top and bottom to press the hay.
- When the desired weight is obtained, push out and tie the hay before storing.
- The hay can be stored for up to 2 years in dry and well aerated spaces.

Dos

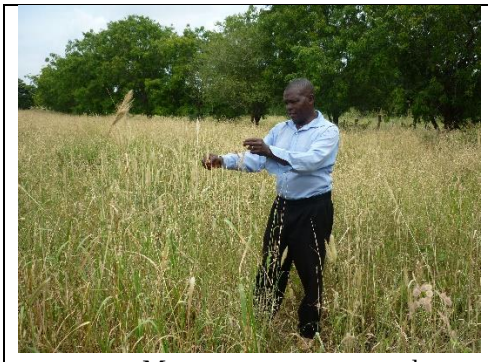
- For hay, always ensure to cut green grass before it seeds.
- For seed production, always ensure to collect mature ripe seed.
- Planting or broadcasting seed should be done before rains.
- Drying of both seeds and grass for hay should be done in the shade.
- Keep animals away in first season of grass establishment to enable grass establish in the field.
- Harvest seeds of different species separately.
- Establish mixed stands of grass species.

Don’ts

- Do not allow grass seed to dry in the field.
- Do not mix different grass seeds when harvesting seeds.
- Do not establish pure stands to produce quality hay.
- Do not wait for the grass to dry before harvesting for hay.

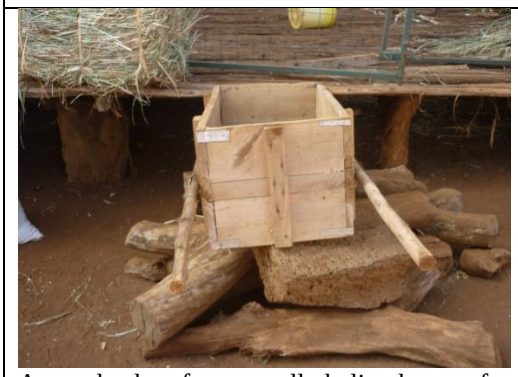
State of pasture field during dry season

State of pasture field at maturity



Mature pasture grass seeds

Different grass seeds



A wooden box for manually baling hay on-farm

Harvesting and making hay from grasses growing under Melia plantation on-farm

A harvested bale of hay weighing 3-5 kg ready for storage and sale

Hay stored on-farm on a raised platform

Compiled by: J. Wanjiku, M. Mukolwe and E. Njenga