

*Grazing-Land And Animal Feed Resources (Pasture  
Management Practices)*

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GOVERNMENT NOTICE No. 57 published on 15/03/2013

THE GRAZING-LAND AND ANIMAL FEED RESOURCES ACT  
(CAP. 180)

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**REGULATIONS**

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*Grazing-Land And Animal Feed Resources (Pasture Management Practices)*

G.N. No. 57 (contd.)

THE GRAZING-LAND AND ANIMAL FEED RESOURCES ACT  
(CAP. 180)

REGULATIONS

*(Made under section 44)*

THE GRAZING-LAND AND ANIMAL FEED RESOURCES (PASTURE  
MANAGEMENT PRACTICES) REGULATIONS, 2013

PART I  
PRELIMINARY PROVISIONS

Citation: 1. These regulations may be cited as the  
Grazing-Land and Animal Feed Resources (Pasture  
Management Practices) Regulations, 2013.

Application 2. These Regulations shall apply to grazing-land  
in Mainland Tanzania.

Interpretation: 3. In these Regulations, unless the context  
otherwise requires-

Cap. 180 "Act" means the Grazing-lands and Animal Feed  
Resources Act;

"Director" means the Director responsible for grazing-  
land utilization and animal feed resources;

"Minister" means the Minister responsible for livestock;

"key plants" means forage species whose use serve as an  
indicator to the degree of use of associated species;

"herbaceous vegetation" means vegetation with soft non-  
woody stem plants;

“owner” means legal occupier of the grazing-land in a particular area;

“silo” means structures for ensiling silage.

## PART II

### PASTURE MANAGEMENT PRACTICES

Vegetation  
management

4.-(1) Any grazing-land owner for the purpose of managing the vegetation in the grazing-land shall-

- (a) reduce woody species to promote herbaceous vegetation growth;
- (b) reduce wood species canopy cover to maximum of 10 percent in a particular grazing-land;
- (c) erect water spreading structures in the grazing-land for optimum vegetation growth that shall not exceed 5 percent of a particular grazing-land; and
- (d) reseed the range-land where the key plants are below 25 percent of the grazing-land.

(2) The owner shall cause resting of the grazing-land for a period ranging from one to three years to ensure growth of key plants.

(3) Subject to the provisions of sub-regulation (2), the resting period shall be based on recommendations from grazing-land inventory to be carried out once every year.

(4) The owner shall institute prescribed burning for the purpose of vegetation management as set out in the First Schedule.

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Pasture  
development

5.-(1) The owner shall develop pasture for sustainable use in the following manner-

- (a) over-sow natural pastures with suitable improved pasture seeds as set out in the Second Schedule;
- (b) control bush as set out in the Fourth Schedule; and
- (c) Weed the grazing-land where applicable as set out in Fifth Schedule.

(2) Owners shall planning to establish pasture by following the guidelines in the manner set out in the Third Schedule.

(3) Any owner who establishes legume species which requires specific *rhizobia* inoculation shall follow specifications set out in the Third Schedule.

PART III  
PASTURE CONSERVATION PRACTICES

Pasture  
conservation

6. -(1) The owner shall conserve pasture as-

- (a) standing hay where pasture in a portion of land within the grazing-land is not grazed or cut until the dry season;
- (b) hay as set out in the Sixth Schedule; and
- (c) silage as set out in the Seventh Schedule.

(2) The conservation of pasture as standing hay shall apply to grazing-lands with a controlled grazing system.

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PART IV  
GENERAL PROVISIONS

Offence and penalties

7.-(1) Any person who contravenes or fails to comply with any of the provisions of these regulations shall be guilty of an offence and shall be liable on conviction to a fine not less than five hundred thousand Tanzanian Shillings or to imprisonment for a term not less than six months or to both fine and imprisonment.

(2) Where an offence under the Act or these Regulations is a subsequent offence and to which no penalty is provided in respect of the continuance thereof, the person who commits that offence, shall in addition to any other penalty, be liable to a fine of not less than one million shillings or to imprisonment to a term of not exceeding six months or to both.

FIRST SCHEDULE

*Made under regulation 4 (4)*

THE USE OF FIRE AS A TOOL FOR RANGE MANAGEMENT

1. For the purpose of managing the grazing-land, land owners may use prescribed burning as a tool.
2. The use of fire in the grazing-land shall be done under the following conditions;
  - (a) the owner shall prove to have enough forage for livestock before and after prescribed burning;
  - (b) the owner shall have the required type of equipment and or adequate number of personnel for firefighting;
  - (c) the owner shall notify his neighbours of his intention;
  - (d) the owner shall notify and seek permission from the Inspector of his intention;
  - (e) the owner shall have a systematic and methodological fire plan to ensure livestock and farm structures protection;
  - (f) the owner shall construct fire breaks of minimum of 5 meters wide depending on the height of vegetation and prevailing conditions;
  - (g) the owner shall put into consideration natural and artificial features and conditions which affect or influence fire intensity;
  - (h) for controlling bush encroachment and provision of high forage production, the frequency of burning shall be every third or fourth year in a properly managed grazing system;
  - (i) the period of burning shall be the end of the dry season shortly before the expected start of rain;
  - (j) the owner shall not use fire as a management tool in areas receiving less than 400 mm of annual rainfall, unless recommended by the Inspector.
3. Owners shall burn the grazing-land using the following procedure-

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- (a) Control the time of burning where the recommended time is early morning and late evening;
  - (b) Starting fire at various points so as to burn the area effectively; and
  - (c) Burn for the wind not against the wind.
4. Post burn grazing shall only be done during mid-growing season when the pastures are at the age of six to eight weeks.

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SECOND SCHEDULE

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*(Made under regulation 5(1)(a))*

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OVER-SOWING NATURAL PASTURES

1. For the purpose of vegetation sustainability, owners shall introduce into the grazing-land desirable pasture species by over-sowing without removing the existing vegetation.
2. Over-sowing by the owners shall be done for the following purposes-
  - (a) to improve pasture quantity and quality of forage;
  - (b) to improve watershed conditions;
  - (c) to control soil erosion; or
  - (d) as a means of providing supplemental or reserve pastures.
3. Owners shall follow the procedure below while over-sowing-
  - (a) choose suitable sites with soils that have good agronomical characteristics such as depth, structure, chemical properties and composition;
  - (b) select the best pasture species for the site;
  - (c) determine the best time of the year for over-sowing when soils have received sufficient moisture;
  - (d) plant the seeds by drilling or broadcasting followed by dragging or

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- (e) trampling by livestock to cover the seeds; choose the best seeding rate depending on plant species as stipulated in the Third Schedule;
- (f) protect the over-sown seeds from ants, birds by using chemical treatment such as aldrin;
- (g) covering the over-sown area with bush or any other method recommended by the inspector;
- (h) protect the over-sown area from grazing animals for one growing season; and
- (i) allow not more than fifty percent of the herbage to be harvested during the first grazing after over-sowing

THIRD SCHEDULE

(Made under regulation 5(2))

GUIDELINES FOR THE ESTABLISHMENT OF SUITABLE PASTURE SPECIES

- I. Any person establishing pasture shall do so in the following manner-
  - (a) for grasses-
    - (i) prepare a clean fine seedbed,
    - (ii) drill 1 centimeter below the surface, sow and cover the seeds,
    - (iii) apply fertilizer during establishment subject to recommendations by soil scientist after soil analysis.
  - (b) for legumes-
    - (i) scarify seeds by mechanical abrasion, soaking in clean cold water for a day or in hot water (3 minutes at 75°C) subject to recommendations from the Inspector;
    - (ii) inoculate with specific *rhizobia* species subject to



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recommendations from the Inspector;

- (iii) prepare a clean seedbed for sowing.
2. The owner shall use seed rates for different grass species as shown in Table A.
  3. Agronomic adaptations and *Rhizobium* needs of some tropical legume forages the owner shall use the information shown in Table B.

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Table A: Summary of the agronomic adaptations and uses of some tropical grass pastures

Grass species	Recommended Sowing Rate for pure pasture stand (Kg/ha)	Tolerance to:						Utilization: Suitable for grazing(G), hay (H), cut and carry (CC), standing hay (SH)			
		Frost	Drought	Shade	Water logging	Mean annual rainfall	G	H	CC	SH	
<i>Brachiaria brizantha</i>	sprigs	Fair	Fair	Good	Fair	1000	✓	✓	-	✓	
<i>Brachiaria decumbens</i>	3-6	Poor	Fair	Good	Fair	1000	✓	✓	-	✓	
<i>Brachiaria ruziziensis</i>	2-5	Poor	Fair	Good	Fair	1000	✓	✓	-	✓	
<i>Brachiaria mutica</i>	2-5	Poor	Fair	Good	Good	1250	✓	✓	-	✓	
<i>Bothriochloa ischaemum</i>	1-3	Fair	Good	Poor	Fair	700	✓	✓	-	✓	
<i>Bothriochloa pertusa</i>	1-3	Fair	Good	Fair	Fair	500	✓	✓	-	✓	
<i>Cenchrus ciliaris</i>	2-4	Fair	Good	Poor	Poor	350	✓	✓	-	✓	
<i>Chloris gayana</i>	2-6	Fair	Good	Poor	Fair	650	✓	✓	-	✓	
<i>Cynodon dactylon</i>	sprigs	Fair	Good	Poor	Fair	600	✓	✓	-	✓	
<i>Cynodon plectostachyus</i>	springs	Poor	Good	Poor	Fair	500	✓	✓	✓	✓	
<i>Cynodon nlemfuensis</i>	springs	Poor	Good	Poor	Fair	500	✓	✓	✓	✓	
<i>Eragrostis superba</i>	2-5	Fair	Good	Fair	Poor	300	✓	✓	-	✓	
<i>Melinis miniflora</i>	2-4	Poor	Fair	Good	Poor	1000	✓	✓	-	✓	
<i>Panicum Coloratum</i>	2-3	Good	Fair	Good	Fair	1200	✓	✓	✓	-	
<i>Panicum maximum</i>	2-6	Poor	Fair	Good	Fair	1200	✓	✓	✓	-	
<i>Pennisetum clandestinum</i>	Sprigs	Good	Fair	Fair	Poor	880	✓	✓	-	-	
<i>Pennisetum purpureum</i>	cuttings	Poor	Good	Fair	Poor	850	-	-	✓	-	
<i>Setaria sephacelata</i>	Sprigs	Good	Poor	Fair	Fair	900	-	-	✓	-	
<i>Setaria anceps</i>	2-5	Good	Fair	Fair	Good	850	✓	✓	-	-	
<i>Tripsacum laxum</i>	Sprigs	Poor	Poor	Fair	Poor	1000	-	-	✓	-	
<i>Sorghum alnum</i>	5-10	Fair	Good	Poor	Fair	450	-	-	✓	-	
<i>Urochloa mozambiensis</i>	2-6	Poor	Good	Fair	Fair	400	✓	✓	-	✓	

Table B: Summary of the agronomic adaptations and *Rhizobium* needs of some tropical legume forages

Legume species	Recommended Sowing Rate for pure forage stand (Kg/ha)	Need of <i>Rhizobium</i>	Tolerance to:					Min annual rainfall (mm)
			Frost	Drought	Shade	Water logging		
<i>Calopogonium muconoides</i>	1-3	Specific	Poor	Fair	Good	Fair	1000	
<i>Centrosema pubescens</i>	3-5	Specific	Poor	Fair	Good	Good	1000	
<i>Desmodium intortum</i>	1-2	Cowpea	Fair	Fair	Good	Fair	900	
<i>Desmodium uncinatum</i>	1-3	Cowpea	Fair	Fair	Fair	Poor	900	
<i>Neonotonia wightii</i>	2-5	Specific	Fair	Good	Fair	Poor	750	
<i>Lablab purpureus</i>	10-20	Cowpea	Fair	Good	Good	Fair	600	
<i>Lotononis bainesii</i>	0.5-1.0	Cowpea	Good	Fair	Poor	Good	900	
<i>Macroptilium atropurpureum</i>	1-3	Cowpea	Fair	Good	Good	Fair	600	
<i>Macropyloma axillare</i>	3-5	Cowpea	Poor	Good	Poor	Fair	1000	
<i>Pueraria phaseolodes</i>	1-3	Cowpea	Poor	Poor	Good	Good	1000	
<i>Stylosanthes guianensis</i>	2-5	Cowpea	Poor	Good	Fair	Fair	850	
<i>Stylosanthes humilis</i>	3-6	Cowpea	Poor	Good	Poor	Poor	600	
<i>Stylosanthes hamata</i>	3-6	Cowpea	Poor	Good	Poor	Poor	600	
<i>Stylosanthes scabra</i>	3-6	Cowpea	Poor	Good	Poor	Poor	450	

Specific rhizobia are freely obtained in the district departments from ILCA and ILRI

FOURTH SCHEDULE

*(Made under regulation 5(1)(b))*

SELECTIVE BUSH CONTROL

1. For the purpose of increasing light to pastures growing beneath bushes, owners shall selectively carry out bush control after assessing bush density.
2. Owner shall control bush in the grazing-land using one or a combination of the following methods-
  - (a) prescribed burning where time, frequency and intensity of fire must be observed. The recommended frequency of burning in semi-arid areas is three years;
  - (b) mechanical methods such as: cutting the stems by using bush knife or axe and burning the debris, stumping which involves cutting and digging out the stumps of bush plant species. Machines such as bulldozer or heavy tractors may be used in thick bushes;
  - (c) chemical methods; in using chemicals to control bush, owner shall adhere to other written laws concerned with environment and the chemicals shall not be harmful to livestock and desirable plants.
3. Methods of chemical application-
  - (a) folial application; spraying with knapsack sprayer, mist blower, tractor boom sprayer or aerial spray;
  - (b) application of paint-
    - (i) on an exposed stump where by painting is done after cutting the plant at about 30cm above the ground;
    - (ii) as a band of 30 to 40 cm wide around the base of the plant close to the ground;
    - (iii) at the base of the trunk encircled by overlapping axe cuts.
  - (c) By special chemical injection: applied at every 8 to 15 cm around the trunk these shall include but not limited to dichlorophenoxyacetic acid,

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2,4,5-T (2,4,5 Trichlorophenoxy acetic acid), Picloram (4-amino - 3,5-dichloropicolinic acid); and

- (d) Ring barking: done to disturb the flow of nutrients up and down the tree bush trunk.

FIFTH SCHEDULE

(Made under regulation 5(1), (c))

WEEDING PROCEDURES

1. Owner shall practice weeding of the grazing-land for vegetation growth and control of poisonous weeds such as *Lantana camara*, *Solanum incunum*, *Dichapetulum stuhlmanii*.
2. Owner shall control poisonous weeds by using one or a combination of mechanical, chemical or biological methods as explained below:
  - (a) mechanical weed control which shall involve use of hand tools for spot weeding or use of machines such as tractors or oxen cultivators;
  - (b) chemical weed control which shall involve use of herbicides by spot spraying or blanket spraying. Owners shall adhere to manufacturer's instructions;
  - (c) owner using chemicals to control weeds shall ensure that:
    - (i) chemicals are selective to kill the intended weeds only;
    - (ii) chemicals are not used near food crops;
    - (iii) sprayed areas are inspected after three weeks, to assess chemical effectiveness;
    - (iv) spraying is not done in windy periods to avoid spread to unintended areas;
    - (v) spraying of chemicals shall not be done when it is raining to avoid being washed away, polluting the water sources and reducing effectiveness;

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- (vi) chemical containers are properly disposed off after use; and
  - (vii) appropriate protective gears are used.
- (e) Biological weed control; this shall involve use of natural organisms as per scientific recommendations.

SIXTH SCHEDULE

*(Made under regulation 6(1)(b))*

PROCEDURES FOR HAY MAKING

1. Owner planning to conserve pasture in the form of hay for feeding animals shall have the necessary equipment and facilities for hay making and storage;
2. The equipment and facilities referred above shall include *inter alia*; mower, rake, baler (hand or machine), and store;
3. Forage conserved as hay shall be grasses or a mixture of legumes and grasses; where a mixture is used, the amount of legumes shall not exceed twenty five percent of total bale;
4. Forage for hay making shall be cut at the flowering stage for optimum nutrient content;
5. In making hay-
  - (a) forage is cut using mowers or sickles and left to dry on the ground. If baling is to be done manually the forage shall be chopped;
  - (b) forage cut shall be dried to attain moisture content of fifteen to twenty percent or when the grass stem does not peel off when scratched;
  - (c) during drying the forage shall be turned at least once a day for short grasses or twice for long grasses;
  - (d) forage is raked and baled using hand or machine bailer; and
  - (e) dried hay shall be stored in a cool and dry place off the floor.

SEVENTH SCHEDULE

*(Made under regulation 6(1), (c))*

PROCEDURES FOR SILAGE MAKING

1. Owner may conserve pasture as silage to feed animals during dry season.
2. Conservation of pasture as silage shall observe the following principles-
  - (a) grasses or cereal crops shall be harvested at flowering stage of growth where they have attained a height of at least 1 to 1.5 meters;
  - (b) grasses or cereal crops for silage shall be carefully chopped into small pieces while avoiding contamination by soil which impair fermentation;
  - (c) equipment used for silage making shall be clean. The ensiling equipment may include earth silos, large and small plastic bags;
  - (d) for effective silage making, the fermentation process shall be facilitated by adding energy sources such as molasses or maize bran; and
  - (e) filling grasses or cereal crops into the silo during silage making shall be limited to one day, otherwise cover the silo to avoid water and air entering the silo.
3. During silage making using the silo, the following procedures are followed-
  - (a) soil shall be excavated where applicable to form a trench of the preferred size;
  - (b) a layer of dry grasses is placed at the bottom of the trench or silo;
  - (c) a heavy plastic sheet cover is placed on the walls of the silo to prevent the soil from falling into the silo;
  - (d) layers of chopped grasses or cereal crops are placed into the silo and each being compacted gradually using a drum half filled with water or a tractor;
  - (e) the silo shall be covered with a plastic material or any water and air proof materials followed by a layer of dry grasses and soil; and
  - (f) ensiled materials shall be left to ferment for fifty days or more before use.

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4. Silage may also be made using heavy black plastic bags of 800 gauge. Silage making using the plastic bags, the following procedures are followed-
  - (a) one end of the plastic bag shall be tightly fastened;
  - (b) grasses or cereal crops are chopped into pieces;
  - (c) add energy sources;
  - (d) layers of chopped grasses or cereal crops are placed into the plastic bag and each being compacted gradually until it is full;
  - (e) upper part of the plastic is tightly covered and fastened to prevent entrance of air and moisture; and
  - (f) the plastic bag containing the fermenting material is placed into a cool and dry place and left to ferment for 50 days or more before use.
5. The silo or plastic bag containing silage shall be opened at a particular point and the required amount be taken and shall be closed to maintain quality.

Dar es Salaam,  
28<sup>th</sup> February, 2013

DAVID MATHAYO DAVID,  
*Minister for Livestock and Fisheries Development*