



BEST PRACTICES FOR **ZERO GRAZING**

Increase milk production and utilization of waste products

BEST SUITED FOR URBAN AND PERI-URBAN FARMERS



Small scale zero-grazing dairy production unit

Improved dairy cattle are permanently kept in stalls with no free-grazing and there is a high level of external inputs, including bought-in feeds, and significant expenditure on livestock and veterinary services. Increased number of urban and peri-urban farmers in Uganda keep animals under the zero grazing system due to limited land holdings.

Why Zero Graze?

- * Ease of manure collection and processing
- * Ease of control of pests and diseases
- * Reduced overgrazing
- * Easier and controlled breeding
- * Improved welfare of the dairy animal

MODERN MULTIPURPOSE ZERO GRAZING UNIT

- 1- Cowshed should be 10m by 7m accommodating 5 dairy animals and four calves at a time
- 2- Standard cubicle length is 210cm and width is 120cm (cow can enter but not turn around)
- 3- Roof made of any available materials e.g., iron sheets or grass thatch
- 4- Roof is raised high enough to avoid being eaten by a cow if it is made of grass or if hay is stored under it
- 5- Cowshed has a rough concrete floor to protect the cow from slipping
- 6- The floor is sloppy to facilitate drainage of waste to a collection area outside the shed



7 Hay barn is 2m x 7m to reduce dry matter losses & maintain forage quality

8 Hay barn storage space capacity is 200 bales of 15kg per hay bale

9 Silage pit for storage of conserved silage is 1.5m x 7m for a volume of 2 tons of silage

10 Clean water storage facilities of 40,000-liter capacity (underground reservoir and above-ground water tank)

11 Biogas & biofertilizer production unit attached to provide alternative clean energy resources.

USE QUALITY BREEDS

Breeds recommended for zero grazing in Uganda



Uganda Jersey

- * High milk production
- * Tolerant to common diseases
- * High butterfat content
- * Milk rich for specialty dairy products

1



Fresians

- * High milk production
- * Calve frequently
- * Calve more often in their lifetime
- * Need less replacements
- * Provide valuable male calves
- * Have lower cell counts
- * Have higher fat and protein percent

2



Ayrshire

- * High milk production
- * Longevity in milk production
- * Efficient grazer
- * High butterfat content
- * Disease tolerant
- * Better muscling and meat quality

3



Guernsy

- * High milk yields
- * Big is size
- * Heavy feeder
- * Low butter content
- * Adaptable to any climate
- * Ease of calving
- * Early maturity and fertility
- * Better milk quality
- * Live longer

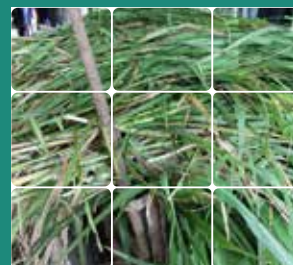
4

USE QUALITY FEEDS

- * Better feeding leads to more milk production
- * Provide adequate feeds throughout the cattle developmental stages
- * Feed cattle at least 3 times a day (30% of dry matter and 20% fresh matter of body weight)
- * Harvest at the right time and avoid contaminants that can lead to feed spoilage
- * Provide cattle with at least 40 liters of water per day
- * Ensure a balanced diet



Protein-based feeds	Energy and fiber feeds
alpha alpha	Elephant grass (Sugar and Super nappier)
Lablab	Bracharia
Calliandra	Maize forage
Centrozema	Sorghum forage
Desmodium	Chloris



For planting, acquire quality seed from NARO and other certified producers

AVOID AFLATOXIN CONTAMINATION IN FEEDS



- * Keep hay and silage in well-ventilated barns
- * Avoid vermin and rodent access
- * Avoid any water absorption and leakages
- * Monitor stored feeds for the presence of aflatoxins
- * Use aflatoxin control product eg NARO aflatoxin binder

MAINTAIN GOOD HERD HEALTH

Health management is one of the most important factors dairy production.

- * Routinely follow the behavior of the animals
- * Contact a veterinary practitioner in incase of any abnormal behavior
- * Maintain proper hygiene in the animal housings to minimize disease causing organisms

COMMON CATTLE DISEASES

Disease	Cause	Symptoms	Prevention & Management
Tick damage and tick-borne diseases 	* Redwater, gallsickness and heartwater diseases (Brown-ear tick), East coast fever (Blue tick), heart water (Amblyommatick)	* Severe damage around the udder and ears * High body temperature * Swelling of the lymphodes * Standing hair court	Redwater: Use imizole as recommended Gallsickness: Use imizole as recommended, use dxytetracycline East coast fever: Use butalex 10% and OTC 30% plus pain killers eg dextra vitamin Heart water: Use oxytetracycline 10%, Dextra and vitamin
Hoof/Foot rot 	* Bacteria which enters the foot after injury resulting in weakening of the hoof tissues	* Extreme pain leading to the sudden onset of lameness * High body temperature * Bilateral swelling of the tissue around the hairline and coronary band of the hoof * Necrotic lesions in the interdigital space, with a foul odor * Low appetite	* Keep the cowshed clean and dry * Use tetracycline antibiotics as recommended * If symptoms persist, consult a veterinary officer
Worms Round worms (Nematodes) Flat worms (Flukes) 	* Poor cattle shade and troughs hygiene * Contaminated pastures and other feeds	* Lack of appetite for the cattle * Stunting of calves or young animals * Swellings of mandibles * Intermittent diarrhea * Swelling of the belly for c * Anemia and paleness of the mucus membrane * Coughing in case of lungworms	* Improved hygiene (remove fecal material from the cowshed) * Regular washing of the troughs and sleeping area * Regular deworming (every 3months)
Mastitis 	* Persistent inflammation of the udder tissue * Physical trauma or microbial infections	* Reduced milk yields * Severe inflammation * High body temperature * Inflammation of the udder that turns into red and hard mass * Swollen and hot mammary gland * Animals do not allow touching the udder and kick to prevent milking * Stained milk (with blood clots) * Lack of appetite * Animal hardly walks properly due to pain * Infected cows are severely dehydrated and suffer from weight loss	* Clean udder before and after milking * Delivery fresh feed while cows are in the parlor to allow feeding on arrival to the pen * Dip the tits into a disinfectant after milking * Clean milkers and the floor * Use correctly functioning milking machines * Avoid over-milking to limit teat damage * Keep the milking parlor and ban clean * Use nutrition balanced feeding diets

NB: Maintain good biosecurity measures for your herd

WASTE MANAGEMENT

Dairy cattle under intensive zero-grazing produce a lot of waste:

- * Manure produced: 28kgs of fresh weight per 400kgs of dairy animal body weight
- * Unutilized livestock waste causes land pollution
- * Farm manure contributes 2.0% of global CH₄ emissions

Benefit more from your zero grazing system through waste value addition

NOTE:

At NARO-NaLIRRI we supply products and train interested companies and individuals in cattle waste value addition

CATTLE WASTE PRODUCTS

Biogas



Bio-briquettes



Biomethane



Bio-liquid



Detergent



bio-fertilizers



Animal feeds



Bio-electricity



Bio-pesticides



Carbondioxide

Sulphuric acid

Improve your zero grazing system with our support. We offer:

- * Training in quality feed production and processing
- * Provide quality breeding stocks
- * Provide improved pasture seeds
- * Training in feeds and feeding
- * Provide Artificial Insemination services
- * Training in modern manure management and product development
- * Provide knowledge for herd health management

National Livestock Resources Research Institute

📍 P.O Box 5704 Kampala
Nakyesasa-Wakiso
Maruzi-Apac

☎ +256 41 4674023
@ director.nalirri@naro.go.ug
🌐 Website: www.naro.go.ug

✉ @NALIRRI
f NARO-NaLIRRI
📺 NARO-NaLIRRI