

DEPARTMENT OF ANIMAL NUTRITION

FEEDING DURING NATURAL CALAMITIES



CONCEPT:-

- India is one of the most disaster prone countries of the planet.
- Natural calamities cause shortage of feed,fodder,beverage which adversely affect human & livestock health & nutrition.
- Restricted feeding should be opted.
- Along with restricted feeding conserved fodders in transportable silage bags, fodder produced through hydroponic systems,urea molasses multinutrient blocks are supplied during emergency situations.

INTRODUCTION:-

- According to The Disaster Management Act,2005,disaster is defined as a misery, resulting from natural/man-made causes/accidental resulting in serious loss of life, destruction of property, environmental degradation that is beyond the control of the affected community.
- Man –made disasters do not harm animals but can cause pollution, industrial accidents environmental damage.
- During a disaster,there is a need to develop a diet plan for animals to ensure their survivability.



FEEDING STRATEGIES:-

- Animal should be fed to maintain their weight or feeding of pregnant or lactating cows should be preferred because they are productive.
- Weight loss of >20% of critical body weight may result in death but sheep and camels can tolerate weight loss upto 30% of the critical body weight.
- Deaths during draught are mainly due to decrease in body fat.
- Alfalfa hay provides sufficient amount of nutrients during emergency.
- Oats provides 25% of the energy & fodder gives 75% of the energy.

Short term dietary requirements of farm animals during calamities:-

Animal	Water (L/d)	Feed (kg/d)
Dairy cows		
In production	26.5-34.0	9.1 hay
Cow with calf	30.3-34.0	5.4-8.2 legume hay
Calf (180 kg)	15.0-22.7	3.6-5.4 legume hay
Swine		
Brood sow with litter	15	3.6 grain
Brood sow (Pregnant)	11.4	0.9 grain
Gilt or boar	3.8	1.4 grain
Sheep		
Ewe with lamb	3.8	2.3 hay
Ewe (Dry)	2.8	1.4 hay
Weanling lamb	1.89	1.4 hay
Poultry		
Layers/100bird	19.0	7.7
Broilers/100bird	18.9	4.5
Turkeys/100bird	45.4	18.1

(FEMA, 1998) ^[16]

NEED FOR WATER:-

- The availability of water during draught is important as water helps to regulate body temperature & it is necessary for transport of nutrients.
- The water requirement for mammals is in the feed range of 2.5-4.5L/kg of DM.
- Supply of water should be reduced every 3 days during Water shortage.
- Reduced urination & reduced food intake are the result of reduced water intake.



LIMITED FOOD:-

- Due to restricted feeding, basal metabolism is reduced mainly due to decreased volume & metabolic activity of the viscera.
- During limited feeding nitrogen transfer between kidney & liver occurs & results in formation of glutamine in the liver.
- In response to the dietary stress T_3 , T_4 , insulin, glucose, α -amino acid nitrogen, growth hormone & NEFA are reduced.
- But when we supply restricted feeding based on the prepared diet plan NEFA, acetate & β -hydroxy butyrate in plasma is increased.
- Low N-excretion, low fatty acid level in rumen, decreased urine intake are observed during limited feeding.



COMPLETE FEED BLOCKS:-

- CFB for feeding concentrates & roughages together in a combined form.
- Complete feed block is made up of fodder concentrate & other additional nutrients in required amounts to meet the animals nutritional requirements.
- This system is economical & efficient.
- Untreated rice stalks can be used as basal roughage supplement with ingredients such as mustard cake, rice bran, molasses & binder with/without fodder



LIQUID UREA MOLASSES FEEDING:-

- Liquid molasses containing 2-3% uniformly mixed urea & fortified with minerals & vitamins is referred to as liquid feed.

COMPOSITION:-

Sugarcane molasses	92.0 part
Urea	2.5 part
Fresh water	2.5 part
Mineral mixture	2.0 part
Common salt	1.0 part



UREA MOLASSES MINERAL BLOCKS:-

- It is a combination of energy, protein & minerals that helps in the survival of the animal until the emergency situations improve during calamities.
- UMMB helps in treating pica & irregular oestrus cycle in cows when this is given as roughage feed supplement.
- It should be avoided for young calves because their rumen are not well developed.

Composition of UMMB

Molasses	45%
Urea	15%
Mineral mixture	15%
Salt	8%
Calcite powder	4%
Bentonite	3%
Any vegetable oil cake	10%



UROMIN LICK:-

- This 'uromin' lick also called 'pashu chaat' that contains urea, molasses & minerals & components mentioned in the following table:-

Composition of Uromin lick

Molasses	30
Urea	10
Deoiled mustard cake	10
Deoiled rice bran	10
Common salt	10
Mineral mix	15
Maida	15
Bentonite	3



DENSIFIED COMPLETE FEED PELLETS(DEFPS):-

- Feeding 6-8 kg/ day of these pellets can support body retention & 3-4 kg of milk/day.

S no	Components	Percentage
1.	Crushed grass	30-35%
2.	Molasses	10-12%
3.	Deoiled rice bran	35-40%
4.	Oily food	10-15%
5.	Urea	1%
6.	Common salt	1%
7.	Calcite powder	1.5%
8.	Mineral mixture	1%



SILAGE TECHNOLOGY FOR SCARCITY PERIOD:-

- The procedure is very simple & involves spraying the urea solution evenly over the grass & storing it for some time.
- This grass contains rich source of soluble carbohydrate that contains a small amount protein that makes bacterial fermentation.
- This should be kept for atleast 4 weeks & then it is ready to feed for animals.
- Ensiling paddy straws based on dry matter form excellent silage.



TREE LEAVES & VEGETABLE LEAVES:-

- Leaves of mango, banyan, pipal, babul etc., can be used as a raw fodder.
- They are good source of protein (6-20% CP), calcium (0.5-2.5%) & vitamin A.

S.no	Component	Parts
1.	Tree leaves	50kg
2.	Peanut cake	5kg
3.	Babul pods	25kg
4..	Urea	1kg

- A 2kg minerals mixture is good for animals.

CONCLUSION:-

- Natural disasters cause severe shortage of food, feed & drinking water & damage healthy food & livestock.
- By feeding the animals with the prepared diet plan and stored silages, mineral blocks etc., We can meet the challenge of increasing the chance of survivability.
- Once the disaster calms down, we have to compensate the animal's lost weight & productivity with proper feeding.

REF:-THE PHARMA INNOVATION JOURNAL2021;SP-10(1):232-236

IMAGES:-<https://images.app.goo.gl/MgiyDL74DynzrBL87>

<https://images.app.goo.gl/1kPZCeawEptMvz7JA>



THANK YOU