

Preconditions for the Development and Use of UMB

The principal concept of UMB supplementation to ruminants is to maximise the rumen function for efficient utilisation of cereal crop residues resulting in better milk and meat production. Basically, the UMB itself is made up of local resources such as molasses, cereal brans, and oilseed cakes. These are being produced on a large scale and are locally available as by-products and wastes from agro-based industries in the HKH Region. An ideal UMB is constituted of more than 75 per cent of these materials. The other constituents of UMB are urea, cement, and salt which constitute about 25 per cent of the total. Although fertilizer grade urea and common salt are foreign imports, nevertheless they are also available in the village without much difficulty. Cement is an expensive item and, in future, it is expected that the inclusion of cement can be reduced substantially or totally eliminated from the UMB mixture in the case of mud-based nutrient blocks. The overall view on the make-up of urea molasses' blocks indicates that almost all of the ingredients are available locally in the South Asian Region where cane molasses, cereal brans, and oilseed cakes are produced. Furthermore, cereal straw and sugar cane (source of cane molasses) represent the bulk of the ruminants' diet for most part of the year in the HKH Region.

Where cereal straws, poor pasture, and matured cut grasses are the main feed resources available, the productivity of ruminants can be markedly stimulated by adapting an appropriate feeding practice that ensures an efficient functioning of the rumen. This can be achieved through the use of urea molasses' multi-nutrient blocks, in which the essentially residual energy and protein, and a range of micro-nutrients, can be included to meet the marginal production function of animals, even under straw-fed conditions.

The role of UMB supplements is to improve the use of fibrous and low nitrogen diets in principal ruminants by correcting the nutritional deficiencies and imbalances. Based on this principal guideline, the development of UMB supplementation technology should meet the following pre-conditions to make a successful impact on the use of locally available feed resources.

- (a) UMB technology is best applicable in those regions or countries where the majority of the ruminant population are raised on cereal crop residues and high fibre, low nitrogen feed for several months a year.

- (b) UMB supplementation influences the production performance in animals raised in marginal feeding conditions more than those raised in high level production conditions; emphasising that the technology would be more appropriate for multipurpose farmers in the HKH Region.
- (c) Based on the principal functions and basic constituents of UMB, the technology of block supplementation would be best fitted to the crop-livestock integrated farming system where the livestock production is dominated by multipurpose animals.
- (d) The requirements for cane molasses as a carrier for urea and other nutrients reflect that suitable areas for the commercial preparation of UMBs would be at and around sugarcane growing areas with firmly established sugar mills. However, it is indicative that a similar type of nutrient blocks (mud based-blocks) can also be prepared from various materials without necessarily incorporating molasses.
- (e) Although the UMB feeding practice has been demonstrated to be a cost-effective input, the success of UMB supplementation depends on the full cooperation and participation of farmers. This necessitates a well-coordinated field extension infrastructure, which more often than not is not effective in many developing countries because of socioeconomic conditions. The role of government agencies, such as the Department of Livestock and Agriculture, will have to be well-coordinated to promote such extension activities in field conditions. In recent years, several organisations and institutions, having well-planned and targeted field extension programmes, have developed within the government as well as non-government sectors of this region.
- (f) The amount of feed resources for ruminants from forestlands and native pastures is deteriorating year after year, due to the overgrazing of pastureland in almost all parts of the HKH Region. Wherever this agro-ecological deterioration prevails, the use of UMB greatly helps to preserve the entire ecosystem through efficient use of crop and plant residues.
- (g) Grazing animals are kept in sub-maintenance or semi-starved conditions from October to May each year in this region. In the dry season, there is an acute shortage of animal feed and its nutrient content is so poor that it can hardly provide the nutritional requirements of farm animals. This sort of feed deficit during winter causes much more distress in the high alpine areas of the HKH Region. Small supplements of UMB could serve as a survival dose for ruminants in times of feed scarcity and play a significant role in solving the nutritional problems of grazing animals.