

## Importance of Total Mixed Ration (TMR) in Dairy Animals

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### SUMMARY

The total mixed ration (TMR) is an alternate strategy to overcome the feed shortage of lactating cows by utilizing available feed resources effectively and efficiently. It is an excellent concept to improve the dry matter intake and maintain healthy rumen environment. The TMR feeding can provide the animal with nutrient balanced ration in every bite which can overcome the limitation of depressed dry matter intake (DMI) during transitional period and helps in prevention metabolic disorders.

### INTRODUCTION

Total mixed ration (TMR) is a practice of weighing and blending all feedstuffs into a complete ration which provides adequate nourishment to meet the needs of dairy cows. A total mixed ration (TMR) is a method of feeding cows that complete mixture of all forages, grains, protein feeds, minerals, vitamins and feed additives formulated to a specified nutrient concentration into a single feed mixture. This is an excellent concept to improve the dry matter intake and maintain healthy rumen environment. Preparation of a nutritionally complete single ration by blending different feed ingredients according to the nutritional requirements of dairy cattle is known as a TMR (Coppock *et al.*,1981).The feeding of balanced nutrition is very important for animals to achieve maximum performance and reproduce successfully. Feeding must be fed in right amount and combination to provide a balanced nutrients to avoid excess and deficiencies. A good feeding management practices must be followed to achieve maximum performance from cows. First monitor the forage and feed inventory on a regular basis and allocate to the appropriate animal group. Second test forages and feeds several times throughout the year or when any noticeable change occurs. Lastly update the ration formulations based on milk production, milk fat and milk protein percent, current body weight and body condition scores, moisture changes in forages or high moisture feed ingredients, and prices of current feeds. Checking of forage moisture on a frequent basis is critical to implementing a successful TMR system. There are several strategies that can be used in TMR systems. Separate TMR can be developed for different animal groups. These can be formulated for fresh cows, early lactation cows, and mid and late-lactation animals as well as for dry cows. Such multi grouped strategies are particularly helpful for meeting the needs of dry cows. Cows can be grouped based on actual or fat corrected milk, days in milk, reproductive status, age, nutrient requirements, and health condition of animals. The TMR contains a balanced ration (Beigh *et al.*2017) which can overcome the poor nutritional status of dairy animals.

### Advantages of TMR feeding

- It reduces the selective consumption of feeds by feeding predetermined amount of forages and concentrates necessary for good production.
- Increase in feed utilization (4%) can be expected when using a TMR compared to a conventional ration of forage and grain fed separately.
- TMR feeding to cows provide the nutrient balanced ration in every bite or mouthful when consumes. This overcomes the limitation of depressed dry matter intake (DMI) during transitional period and helps in prevention metabolic disorders.
- TMR provides more control and accuracy of the feed amounts fed than when feeds are fed as separate ingredients.
- Small amounts of low quality forages or unpalatable feed ingredients can be successfully fed and better utilized by the cow when fed in a TMR as compared to feeding of individual feeds.
- Total mixed ration (TMR) can reduce the labor costs at medium and large dairy farms thereby increasing profitability of the dairy farm.
- The daily feed intake of a cow can be measured easily while feeding TMR. Hence by knowing the daily feed and dry matter intake the correct amount of feed and nutrients can be fed by reducing the wastage and feed cost.
- The feeding of TMR correctly balanced to nutrient specifications can increase milk production up to 4 to 5%.

- The milk composition also get improved because of the better rumen fermentation and balance of nutrients being consumed by cows through balanced TMR.
- The farmers can also utilize a greater variety of food industrial byproduct as part of TMR helps in saving the cost of feeding.

### **Disadvantages of TMR feeding**

- The feed mixer required for preparing TMR are expensive and it may not be feasible for small farmers to purchase it.
- The initial capital investment on TMR machine is more than traditional feeding system.
- The dairy farms needs to group the cows for effective utilization of TMR feeding and grouping cows is not feasible in small herds.
- The individual cow feeding attention is not possible with a TMR feeding system.

### **CONCLUSION**

The TMR feeding may increase the feed utilization as compared to a conventional ration. Hence selective feeding of feeds by animals is minimized and cows eat a predetermined amount of forages and concentrates required for optimum production and health.

### **REFERENCES**

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