*The Haryana Veterinarian* (June, 2024) **63(1),** 44-51 ISSN 0033-4359 (P) **Research Article**

# MANAGEMENT AND FEEDING PRACTICES DURING TRANSITION PERIOD OF BUFFALO IN THE VINDHYA REGION OF MADHYA PRADESH

SUMAT KUMAR SHAKYA, NAWAL SINGH RAWAT, ANJANI KUMAR MISHRA, SUMAN SANT[1], KUMAR GOVIL[2]*, RAJEEV RANJAN[3] and KARISHMA KAKOTIYA
Department of Livestock Production and Management,
[1]Department of Veterinary and Animal Husbandry Extension Education,
[2]Department of Animal Nutrition, [3]Department of Veterinary Pharmacology and Toxicology,
College of Veterinary Science and Animal Husbandry, Rewa-486001, M.P., India

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## ABSTRACT

A study was conducted to collect the information on existing management practices and feeding management of buffaloes of the Vindhya region in Madhya Pradesh. Data were collected from randomly selected 240 dairy buffalo owners through personal interview with the help of pre-tested structured schedule. None of the farmer incorporated common salt and mineral mixture in animal ration; however maximum respondent's occasionally added common salt (83.75%) and mineral mixture (34.17%) in the ration during transition period. Farmers in the study area following conventional housing system and only 22.5% and 67.50% buffalo owners practiced to separate their pregnant animals from the herd and propercutting of naval cord after parturition, respectively. The disease incidence occurs in majority of animals during transition period and having vaginal discharge after 14 days. The majority of respondents practiced additional concentrate feeding before and after calving. It can be concluded from the study that in order to increase the milk production in rural conditions there is need to educate the buffalo farmers about importance of salt and mineral mixture, feeding of scientifically balanced ration during transition period with regular vaccination, proper sanitation and segregation of sick and pregnant buffaloes from healthy ones.

**Keywords:** Buffalo, Feeding, Health, Nutritional status, Transition period

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In terms of revenue, employment, and foreign exchange gains, the livestock industry plays a significant role in India's economy. The total population number of bovines (cattle and buffalo) and buffalo population are 302.34 million and 109.85 million according to the 20th Livestock Census. India is largest milk producers in the world. Dairy sector in the India has shown remarkable development in the past decade. The milk production during 2021-22 is 221.06 million tones and growing at an annual growth of 5.29%. The per capita availability of milk is increased to 444 grams/day in 2021-22 (DAHD, 2022-23).

Buffalo can be considered a backbone for the development of dairy industry in India, contributing 56% of the total milk, while, they constitute only 34.6% of total bovine population (FAO, 2012). River-buffaloes are found mainly in South-Asian countries like India and Pakistan, reared mainly for milk and meat production. Buffalo meat is lean and contains less saturated fat compared to beef and pork and having good nutritive value. (Murthy and Davadason, 2003). About 63% of the world's buffalo milk and 95% of buffalo milk in Asia is contributed by Indian buffaloes (Boopathi *et al.*, 2021).

Buffalo milk is healthy as it is richer in saturated fatty acids; it contains higher total solids useful for preparation of cheese, butter, sweets and ice creams. Buffalo have been used for draft and termed as the 'living tractor'. In addition buffaloes are also widely used to plow or level land, plant crops, puddle rice fields, cultivate crops, pump water, haul carts and shallow draft boats, carry people, thresh grain, press sugar cane, haul logs, and much more for farmers particularly marginal farmers.

The transition period is the period from 3 weeks pre-calving to 3 weeks post-calving (Grummer, 1995). The term transition defines the important physiological, metabolic and nutritional changes occurring in this time duration. This phase constitutes a turning point in the productive cycle of the cow going to next lactation. Most farmers often ignore this crucial period in productive lifecycle of the animal leading to decreased milk production in the coming lactation and higher incidence of metabolic disorders. Thakur *et al.* (2016) studied the nutrient status of buffaloes of Indore district of Malwa region of Madhya Pradesh and found shortage of DCP, P, Zn, Cu, vitamin A and vitamin E by 11%, 21%, 65%, 2%, 45% and 80%, respectively in advanced pregnant buffaloes.

The nitrogen utilization and growth in Swamp buffalo is more efficient than Malaysian cattle (Devendra, 1985). This better nitrogen utilization and growth isparticularly noticeable when the feed supply isof low quantity and/or quality (Wanapat *et al.*, 2003). Praveen and

*Corresponding author: kumargovil22@gmail.com

Dhaarani, (2018) found that failure in proper management during transition phase leads to lowered milk production, immune suppression, poor reproductive performance. Therefore, keeping in view the aforesaid, it is necessary to acquire the data on management practices and feeding management of the buffaloes during transition period in Vindhya region of Madhya Pradesh.

## MATERIAL AND METHODS

The present study was conducted in Vindhya region of Madhya Pradesh state. As per Livestock Census 2019, total population of Buffalo in Vindhya region of Madhya Pradesh is 10.3 Million. Four districts (Rewa, Satana, Sidhi and Singrauli) were selected from Vindhya region of Madhya Pradesh.Three tehsils and two villages from each district were randomly selected from identified district. Afterwards, preliminary survey was conducted to know the numbers of farmers practicing the buffalo rearing.

**Table 1. Selected Tehsils and Villages of Rewa district**

| District | Tehshil | Village |
|---|---|---|
| Rewa | Teonther | Maghigawan |
| | | Barha |
| | Jawa | Banigawan |
| | | Janakhaikalan |
| | Hanumana | Khatkhari |
| | | Gauri |
| Satna | Nagod | Semarwara |
| | | Bamhaur |
| | Maihar | Podi |
| | | Bharauli |
| | Raghuraj Nagar | Rampur |
| | | Guluwa |
| Sidhi | Sihawal | Bithauli |
| | | Bichhri |
| | Gopdbanas | Upani |
| | | Bhatha |
| | Majhauli | Tala |
| | | Saraiha |
| Singrauli | Chitrangi | Pondi (Bagdari) |
| | | Kusahi |
| | Deosar | Jhara |
| | | Jiawan |
| | Waidhan | Harrahawa |
| | | Tiyara |

From selected villages randomly 10 buffalo owners as respondents were chosen randomly from each selected villages, thus,data from total 240 dairy farmers were collected for management and feeding practices adopted by the farmers of the selected area. The questionnaire regarding management practices and feeding management was developed and pilot tested prior to the implementation. The farmer's houses were regularly visited to gather the data mostly during the morning hours. The data obtained were analyzed to determine the frequency and percentage.

**a.** Study on management practices of buffaloes during transition period-

**Table 2. Management practices during transition period**

| S.No. | Parameters | Measurement |
|---|---|---|
| 1. | Segregation of pregnant buffalo from the herd (one month before expected date of calving) | Through interview schedule |
| 2. | Calving assistance required for buffaloes | |
| 3. | Naval cord disinfection in buffalo calves | |
| 4. | The disease incidence in buffaloes | |
| 5. | Vaginal discharge after 14 days of calving in buffaloes | |
| 6. | Sanitary practices inside buffalo shed | |

**b.** Feeding management studied during transition period are as below-

**Table 3. Feeding management during transition period**

| S.No. | Parameters | Measurement |
|---|---|---|
| 1 | Feeding of concentrate to advance pregnant heifer | Through interview schedule |
| 2 | Special feeding or extra amount of concentrate to the buffaloes after calving | |
| 3 | Concentrate feeding based on feeding standard | |
| 4 | Challenge feeding for buffaloes | |

## RESULT AND DISCUSSION

### a. Management practices during transition period

The information regarding management practices during transition period opted by the buffalo owners in Rewa, Satna, Sidhi and Singrauli districts are discussed as below-

### 1. Segregation of pregnant buffaloes from the herd

All the farmers rearing the animal under conventional housing system. On the basis of data obtained it was reported that 77.50% of the respondents did not separated and 22.50% respondents separated pregnant buffalo one month before the expected date of calving from the herd (Table 4). All of the respondents housed sick andhealthy buffaloes together may be due to lack of knowledge about the isolation and segregation process to control the spread of diseases in the herd or due to less availability of space.

The district wise results of present investigation was also observed that majority 96.67%, 61.67%, 95.00% and 56.67% of the respondents did not separate of pregnant buffalo one month before the expected date of calving from the herd, whereas only 3.33%, 38.33%, 5.00% and 43.33% of the respondents practices the separation of pregnant buffalo from the herd in Rewa, Satna, Sidhi and Singrauli district, respectively.

**2. Calving assistance required for buffaloes**

On the basis of data obtained it is found that overall 91.25% of respondents did not need any assistance during calving, whereas only 8.75% of the respondents needed assistance during calving of buffalo as shown in Table 4.

The district wise results of present investigation in case of requirement of assistance during calving, the majority 93.33%, 98.33%, 81.67% and 91.67% of respondents did not need any assistance during calving, whereas only 6.67%, 1.67%, 18.33% and 8.33% of the respondents needed assistance during calving of buffaloes in Rewa, Satna, Sidhi and Singrauli district, respectively. Similarly, Kumar and Mishra (2011), Bais and Singh (2013) and Sabapara *et al.* (2015) also reported assistance during calving amongst majority of farmers at the time of parturition. However, contrary to the present findings by Pata *et al.* (2019) reported majority of respondents attended calving and took care of the calves after parturition in the Junagadh and Porbandar districts of Gujrat.

**3. Naval cord disinfection in buffalo calves**

The findings presented in Table 4 revealed that overall 67.50% of the respondents followed the navel disinfection of calf after birth, while 32.50% of respondents not practicing the proper ligation, cutting and disinfection of the naval cord leaving it to fall off naturally. The higher percentage of dairy farmers following these practices of naval cord disinfection was probably due to awareness. The district wise results of present investigation revealed that majority 100.00%, 53.33%, 66.67% and 50.00%, of the respondents practiced navel cord disinfection in calf after parturition, whereas 0.00%, 46.67%, 33.33% and 50.00% of the respondents did nothing for navel cord disinfection in Rewa, Satna, Sidhi and Singrauli district, respectively.

For proper navel cord disinfection, it should be cut two inches skin, the contents is squeezed out, dipped in iodine tincture and tied using clean thread to prevent infection. In the present study, majority of the farmers were aware about the navel cord disinfection and care of new born, it helped to reduce the calf mortality. These findings are well comparable with finding of Bilal *et al.* (2019), who reported majority of the farmers practicing navel cord cutting and disinfection. There still is room for improvement in this regard, who are not practicing navel cord care are exposing their newborn calves to diseases. Contrary to our findings, Pawar *et al.* (2006), Sabapara *et al.* (2010) and Kour *et al.* (2019), they revealed that majority of the respondents did not practice navel cord disinfection and it was left to fall off itself naturally.

**4. The disease incidence in buffaloes**

The findings presented in Table 4 revealed that the in Vindhya region overall 90.84% of the respondents told that the disease incidence occurs during transition period, whereas only 9.16% of the respondents told that buffalo escaped from the diseased incidence during transition period. Among disease incidence in buffaloes in the Vindhya region, majority of buffaloes were suffering from mastitis, retained fetal membranes, metritis, hypocalcaemia, dystocia, prolapseare 57.79%, 30.28%, 6.43%, 2.75%, 2.29% and 0.46%, respectively were reported. The district wise results of present investigation reported that the disease incidence occurs during transition period in majority 78.33%, 100.00%, 85.00% and 100.00% of buffaloes, whereas only 21.67%, 0.00%, 15.00% and 0.00% of buffaloes escaped from the diseased incidence in Rewa, Satna, Sidhi and Singrauli districts, respectively.

Among disease incidence in buffaloes, majority of buffaloes were suffering from mastitis, retained fetal membranes, prolapse and dystocia in different proportion in above mention district. The high incidence of disease occurrence might be attributed to poor managemental practices followed by the farmers. The results showed that farmers were unaware about most of the infectious disease occurring during pregnancy and calving. Similarly, Thakur *et al.* (2017) and Pata *et al.* (2019) reported that metabolic disorders are the major problem in buffalo farming, followed by mastitis and reproductive disorders. Scientific management of dairy buffaloes also helped to prevent the disease incidence.

**5. Vaginal discharge after 14 days of calving in buffaloes**

The findings presented in Table 4 revealed that 100.00% of the buffaloes had vaginal discharge after 14 days in Vindhya region. The overall incidence of white and clear vaginal discharge after 14 days among the buffaloes were found to be 75% and 25%, respectively. The district wise results of present investigation revealed that majority about 100.00%, 100.00%, 100.00% and 100.00% of the buffaloes had vaginal discharge after 14 days in Rewa, Satna, Sidhi and Singrauli district, respectively. Among these buffaloes, 66.67%, 75.00%, 81.67% and 76.67% showed white discharge, while only 33.33%, 25.00%, 18.33% and 23.34% showed clear vaginal discharge after 14 days in Rewa, Satna, Sidhi and Singrauli district, respectively.

According to Sheldon *et al.* (2006) approximately 80 to 100% of cattles have bacteria in their uterine lumen within the first 2 week after calving. Although, the immune system of the body gradually removes the microbes, still up to 40% of cows have bacterial contamination in their

**Table 4. Management practices followed by buffalo owners during transition period**

| | Category | Rewa | | Satna | | Sidhi | | Sin | | Overall | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | N | % | N | % | N | N | % | N | % | N |
| **1.** | **Segregation of pregnant buffaloes from the herd** | | | | | | | | | | |
| | Yes | 2 | 3.33 | 23 | 38.33 | 3 | 5.00 | 26 | 43.33 | 54 | 22.50 |
| | No | 58 | 96.67 | 37 | 61.67 | 57 | 95.00 | 34 | 56.67 | 186 | 77.50 |
| **2.** | **Calving assistance required for buffaloes** | | | | | | | | | | |
| | Yes | 4 | 6.67 | 1 | 1.67 | 11 | 18.33 | 5 | 8.33 | 21 | 8.75 |
| | No | 56 | 93.33 | 59 | 98.33 | 49 | 81.67 | 55 | 91.67 | 219 | 91.25 |
| **3.** | **Naval cord disinfection in buffalo calves** | | | | | | | | | | |
| | Yes | 60 | 100.0 | 32 | 53.33 | 40 | 66.67 | 30 | 50.00 | 162 | 67.50 |
| | No | 0 | 0.00 | 28 | 46.67 | 20 | 33.33 | 30 | 50.00 | 78 | 32.50 |
| **4.** | **The disease incidence in buffaloes** | | | | | | | | | | |
| | Yes | 47 | 78.33 | 60 | 100.00 | 51 | 85 | 60 | 100.00 | 218 | 90.84 |
| | No | 13 | 21.67 | 0 | 0.00 | 9 | 15 | 0 | 0.00 | 22 | 9.16 |
| | Lameness | 0 | 0.00 | 0 | 0.000 | 0 | 0 | 0 | 0.00 | 0 | 0.00 |
| | Metritis | 0 | 0.00 | 4 | 6.67 | 0 | 0 | 10 | 16.67 | 14 | 6.43 |
| | Mastitis | 5 | 10.64 | 55 | 91.66 | 21 | 35 | 45 | 75.00 | 126 | 57.79 |
| | Hypocalcaemia | 0 | 0.00 | 1 | 1.67 | 0 | 0.00 | 5 | 8.33 | 6 | 2.75 |
| | ROP | 36 | 76.6 | 0 | 0.00 | 30 | 50 | 0 | 0.00 | 66 | 30.28 |
| | Prolapse | 1 | 2.12 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 1 | 0.46 |
| | Dystocia | 5 | 10.64 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 5 | 2.29 |
| **5.** | **Vaginal discharge after 14 days of calving in buffaloes** | | | | | | | | | | |
| | Yes | 60 | 100.0 | 60 | 100.0 | 60 | 100.0 | 60 | 100.0 | 240 | 100 |
| | No | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 00 | 0.00 |
| | White | 40 | 66.67 | 45 | 75.00 | 49 | 81.67 | 46 | 76.67 | 180 | 75.00 |
| | Thick | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 00 | 0.00 |
| | Sticky | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 00 | 0.00 |
| | Red | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 00 | 0.00 |
| | Clear | 20 | 33.33 | 15 | 25.00 | 11 | 18.33 | 14 | 23.33 | 60 | 25.00 |
| **6.** | **Sanitary practices inside buffalo shed** | | | | | | | | | | |
| | Yes | 24 | 40.00 | 45 | 75.00 | 42 | 70.00 | 37 | 61.67 | 148 | 61.67 |
| | No | 36 | 60.00 | 15 | 25.00 | 18 | 30.00 | 19 | 38.33 | 92 | 38.33 |
| | Bleaching powder | 7 | 29.17 | 5 | 11.10 | 28 | 66.67 | 4 | 10.81 | 44 | 29.73 |
| | Phenol | 14 | 58.33 | 20 | 44.45 | 12 | 28.57 | 14 | 37.83 | 60 | 40.54 |
| | Detergent | 3 | 12.50 | 20 | 44.45 | 2 | 4.76 | 19 | 51.36 | 44 | 29.72 |

(N and % indicate the number and percentage of respondents, respectively)

uterus 3 week after parturition (Sheldon *et al.*, 2008). The bacteria in the uterus and the acute-phase protein response causing clinical endometritis, thus, vaginal discharge (Williams *et al.*, 2005).

### 6. Sanitary practices inside buffaloes shed

Results can be observed from the Table 4 showed that overall 61.67% of the respondents practiced different measure to sanitize the buffalo shed whereas only 38.33% of the respondents were not followed any measure sanitize the buffalo shed in study area. The present study revealed that about 40.00%, 75.00%, 70.00% and 61.67% of farmers practiced different measure to sanitize the shed whereas, 60.00%, 25.00%, 30.00% and 38.33% of farmers did not practiced any sanitization process in Rewa, Satna, Sidhi and Singrauli district, respectively.

The district wise results of present investigation showed that among the different sanitization practice, about 29.17%, 11.10%, 66.67% and 10.81% of farmers used Bleaching powder, whereas 58.33%, 44.45%, 28.57% and 37.83% of farmers used Phenol and 12.50%,

**Table 5. Feeding management studied during transition period**

**1. Feeding of concentrate to advance pregnant heifer**

| Category | Rewa | | Satna | | Sidhi | | Singrauli | | Overall | |
|---|---|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | N | % | N | % | N |
| Without special feeding | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| For last 15 days | 23 | 38.33 | 10 | 16.67 | 10 | 16.67 | 15 | 25.00 | 58 | 24.17 |
| For last one months | 34 | 56.67 | 50 | 83.33 | 40 | 66.66 | 45 | 75.00 | 169 | 70.42 |
| For last two months | 3 | 5.00 | 0 | 0.00 | 10 | 16.67 | 0 | 0.00 | 13 | 5.41 |
| **2. Special feeding to the buffaloes after calving** | | | | | | | | | | |
| Special feeding | 10 | 16.67 | 56 | 93.33 | 10 | 16.67 | 40 | 66.67 | 116 | 48.34 |
| Without special feeding | 50 | 83.33 | 4 | 6.67 | 50 | 83.33 | 20 | 33.33 | 124 | 51.66 |
| **3. Concentrate feeding based on feeding standard** | | | | | | | | | | |
| Feeding standard | 28 | 46.67 | 0 | 0.00 | 10 | 16.67 | 0 | 0.00 | 38 | 15.84 |
| Without feeding standard | 32 | 53.33 | 60 | 100.0 | 50 | 83.33 | 60 | 100.0 | 202 | 84.16 |
| **4. Challenge feeding for buffaloes** | | | | | | | | | | |
| Challenge feeding | 38 | 63.33 | 51 | 85.00 | 33 | 55.00 | 48 | 80.00 | 170 | 70.83 |
| Without challenge feeding | 22 | 36.67 | 9 | 15.00 | 27 | 45.00 | 12 | 20.00 | 49 | 29.27 |

(N and % indicate the number and percentage of respondents, respectively)

44.45%, 4.76% and 51.36% of farmers used Detergent to sanitize the shed in Rewa, Satna, Sidhi and Singrauli district, respectively. This might be due to that the farmers aware about sanitary and hygienic condition in buffalo shed. Regarding the sanitary condition of shed, the present findings are comparable to Aulakh and Rajbir (2012) and Viswkarma *et al.* (2018) who reported that majority of the farmers used sanitizer and disinfectant for cleaning of their shed. However, Khadda *et al.* (2017) and Vranda *et al.* (2017), reported that majority of farmers, did not give more attention towards sanitary condition of shed and not using sanitizer and disinfectant for cleaning of their shed.

**b. Feeding management during transition period**

The information regarding nutritional status during transition period opted by the buffalo owners in Rewa, Satna, Sidhi and Singrauli districts. The different nutritional managemental practices during transition period related to buffalo were discussed with following heads-

**1. Feeding of concentrate to advance pregnant heifer**

The results of the Table 5 indicated that overall highest 70.42% of the buffalo keepers were feeding concentrate to heifers for last one month during advance pregnancy, While 24.17% of the respondents provide concentrate feed for last 15 days and only 5.41% of the respondents provide concentrate feed for last two month to advance pregnant heifer during transition period. The district wise results of present investigation reported that majority 56.67%, 83.33%, 66.66% and 75.00% of respondents provide concentrate feed for last one month during advance pregnancy of heifer, while 38.33%, 16.67%, 16.67% and 25.00% of the respondents provide concentrate feed for last 15 days and only 5.00%, 0.00%, 16.67% and 0.00% of the respondents provide concentrate feed for last two month in Rewa, Satna, Sidhi and Singrauli district, respectively.

Scientific feeding during transition phase is very importantas maximum development of fetus occurs during last trimester of pregnancy. The supplementation of mineral mixture to the pregnant buffaloes improves productive performance of the buffaloes. The digestive system of high yielders has better concentrate digestion resulting in body weight gain and improvement of body condition of buffaloes.

Similarly, Chowdhry *et al.* (2006), Rathore and Kachwaha (2009), Sabapara *et al.* (2016), Kumar and Mishra (2011), Kumar *et al.* (2011), Manohar *et al.* (2014) and Kumar *et al.* (2019) reported that majority of the buffaloes farmers feeding concentrate to the advanced pregnant heifers. Contrary, Madke *et al.* (2006), Kishore *et al.* (2013) and Rangamma *et al.* (2013) reported few farmers feeding concentrate to their advanced pregnant buffaloes. Sabapara *et al.*, 2016 and Kumar *et al.* (2019)

also found that majority percent of the respondents feeding concentrates to their advanced pregnant heifers during last 2 months of pregnancy.

**2. Special feeding to the buffaloes after calving**

The results of the Table 5 indicated that overall about 48.34% of respondents practiced special feeding after calving, while 51.66% of respondents did not practiced any type of special feeding after calving. The district wise results of present investigation indicated that 16.67%, 93.33%, 16.67% and 66.67% of respondents practiced special feeding after calving whereas, without special feeding after calving was 83.33%, 6.67%, 83.33% and 33.33% in Rewa, Satna, Sidhi and Singrauli districts, respectively.

Most respondents had adequate knowledge about feeding care after calving. These findings are in agreement with Divekar and Saiyed (2008), Sabapara *et al.* (2010), Kishore *et al.* (2013) and Kumar *et al.* (2019), who reported the majority of the respondents, followed special feeding after calving.

**3. Concentrate feeding based on feeding standard**

The result of present study in table 5, indicated that overall 84.16% of respondent did not followed the guideline of feeding standard, while only 15.84% of respondent nourished their buffalo as per the guideline of feeding slandered and giving concentrate feed based on quantity of milk produced during transition period. The district wise results of present investigation indicated that majority i.e. 53.33%, 100.00%, 83.33% and 100.00% of respondent did not followed the guideline of feeding slandered, while 46.67%, 0.00%, 16.67% and 0.00% of respondent nourished their buffaloes as per the guideline of feeding slandered and giving concentrate feed based on quantity of milk produced in Rewa, Satna, Sidhi and Singrauli, districts, respectively.

Similarly, Dar et al. (2017) found that majority of the respondents (97.75%) not feeding animals according to productivity level. Contrary, Malik *et al.* (2005), Divekar and Saiyed (2008), Sheikh *et al.* (2011), Sabapara *et al.* (2016) and Kumar *et al.* (2019), reported that majority of the respondents (87.50%) fed concentrates to their animals as per milk production, and few percent of the respondents fed concentrates to their animals on a no criteria basis. Manohar *et al.* (2014) reported that majority of respondent feeding 1 kg concentrate per 2 litres of milk per day to the lactating buffaloes.

**4. Challenge feeding for buffaloes**

The results of challenge feeding practices studied for buffaloes were presented in Table 5, showed that overall about 70.83% of respondents allowed challenge feeding, while 29.27% of the respondents did not allowed challenge feeding to their buffalo.

The district wise results of present investigation showed that majority about 63.33%, 85.00%, 55.00% and 80.00% of respondents allowed challenge feeding, while 36.67%, 15.00%, 45.00% and 20.00% of the respondents did not allowed challenge feeding to their buffaloes in Rewa, Satna, Sidhi and Singrauli district, respectively. These results were in accordance with Patil (1996) and Bourde (1992).

## CONCLUSION

On the basis of data obtained from the present study on buffalo farmers of Vindhya region about management and feeding management during transition period of the animal, it is concluded that majority of the farmers did not separate of pregnant buffalo from the herd, did not need any assistance during calving, face the navel disinfection of calf after birth, disease incidence occurs during transition period, and almost every buffalo (100.00%) had vaginal discharge after 14 days, and farmers were practicing different measure to sanitize the buffalo shed. In addition, buffalo keepers were feeding concentrate to heifers for last one month during advance pregnancy but did not followed the guideline of feeding standard during transition period, while, lesser farmers practiced scientific feeding to the animal after calving and allowed challenge feeding during transition period. Thus in order to increase the milk production in rural conditions there is need to educate the buffaloes farmers about importance of salt and mineral mixture in buffaloes ration, feeding of scientifically balanced ration in transition period.

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