

*Original Research***Analysis of Animal Welfare Practices Adopted by Gaushalas (Cow-Shelters) in Karnataka State****Kalyan Mandi<sup>1\*</sup>, S. Subash<sup>1</sup>, Subrata Kolo<sup>2</sup>, Rohit Kumar<sup>3</sup> and Narendra Pratap Singh<sup>2</sup>**<sup>1</sup>Dairy Extension Division, Southern Regional Station, ICAR-National Dairy Research Institute, Bengaluru-560030, INDIA<sup>2</sup>Animal Genetics & Breeding Division, ICAR-National Dairy Research Institute, Karnal-132001, Haryana, INDIA<sup>3</sup>Livestock Production Management Section, ICAR-National Dairy Research Institute, Karnal-132001, Haryana, INDIA**\*Corresponding author:** [kalyan.mandi@gmail.com](mailto:kalyan.mandi@gmail.com)

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**Abstract**

*Gaushalas play a vital role in safeguarding the cattle wealth of our country. It is primarily occupied with providing shelter to cows and caters mostly the needs of non-lactating, weak, unproductive and stray cattle. In Karnataka State, out of total 80 gaushalas registered, 22 gaushalas are recognized under Animal Welfare Board of India (AWBI). The present study was conducted in 40 gaushalas selected randomly out of 80 registered gaushalas. The forty selected gaushalas were categorized as small (12), medium (18) and large sized (10) gaushalas based on the herd size. The growing concern for animal welfare in the present context has put lot of emphasis worldwide. With this view, present study was undertaken with the objective of understanding the level of adoption of animal welfare practices by the gaushalas. The results of the present study clearly indicated that 60.00 percent of the large sized gaushalas belonged to high adopter categories, 56.00 percent of the medium sized gaushalas belonged to medium adopter categories and half (50.00%) of the small sized gaushalas belonged to low adopter categories in terms of adoption of overall animal welfare practices. However, it was also observed that paucity of funds, inadequate financial aid from governments, inadequate fodder availability, inadequate access to technical services, poor infrastructure facilities and poor management were found to be the perceived constraints in adoption of animal welfare practices in gaushalas.*

**Key words:** Adoption, Cattle, Gaushalas, Practices, Welfare**How to cite:** Mandi, K., Subash, S., Kolo, S., Kumar, R., & Singh, N. (2020). Analysis of Animal Welfare Practices adopted by Gaushalas (Cow-shelters) in Karnataka State. International Journal of Livestock Research, 10(2), 20-29. doi: 10.5455/ijlr.20191125064742**Introduction**

‘Gaushala’ means an institution established for the purpose of keeping, breeding, rearing and maintaining cattle for the purpose of reception, protection and treatment of infirm, aged or diseased cattle. It is primarily

focused on providing shelter to cows and caters mostly to the needs of non-lactating, weak, unproductive, and stray cattle (Yadav, 2007). As per the 19<sup>th</sup> Livestock Census (Anonymous, 2012), India is having about 190 million cattle population, 79% of which are indigenous and the rest 21% constituted as crossbred/exotic. But, a last half decade (2012-19) has seen decline in the total indigenous cattle population to a tune of 8.94 percent. The major factors for decrease in cattle population are attributed to uneconomical returns due to low productivity and replacement of draft power in agriculture by mechanization. As a result, particularly unproductive, old and stray cattle find shelter in the gaushalas instead of individual households. At present India possess around 4500 gaushalas among which approximately 1850 gaushalas are registered under Animal Welfare Board of India (AWBI) which serves largely the indigenous cattle population (Anonymous, 2014a). According to Rashtriya Gokul Mission (RGM) development of Integrated Indigenous Cattle Centers – “Gaushalas” envisages for enhancement of productivity of indigenous breeds through provision of proper shelter, feeding and health care facilities for stray and abandoned animals (Anonymous, 2014b). The growing concern for animal welfare in the present context has put lot of emphasis worldwide. According to OIE (World Organization for Animal Health), An animal is in a good state of welfare if it is healthy, comfortable, well nourished, safe, able to express innate behavior, and if it is not suffering from unpleasant states such as pain, fear, and distress (OIE, 2008). IDF (2008) in the guidelines states that animal welfare is mainly concerned with the ‘five freedoms’ which described the basic needs. This consists free from thirst, hunger and malnutrition, free from discomfort, free from pain, injury and diseases, free from fear and distress, and able to engage in normal patterns of animal behaviour. Hence, both failure to cope with the environment and difficulty in coping are indicators of poor animal welfare (Broom, 1991). According to Fraser, 2005, any instruction in Animal Welfare should include the following three cornerstones: animal behaviour, ethics and legislation (policy). Welfare science predominantly concerns the quantification of the influence of human actions on animals (Main *et al.*, 2005), and its repercussions on physiological, behaviour and health issues. Information about how much a diseased or injured animal is suffering can be obtained from direct behavioural measures of difficulties in trying to cope with the pain or discomfort i.e., of poor welfare (Morton and Griffiths, 1985). If animals are kept in a way that their immune systems are less effective in combating disease, there is clearly some inadequacy in the management and housing system (Broom, 1987; Fraser and Broom, 1997). Thereby, housing conditions and management practices seem to have a greater effect on animal welfare than the number of dairy cows per farm (Gieseke *et al.*, 2018). Therefore, animals must be raised under acceptable standards of welfare from stable to table, ensuring humane handling during slaughtering procedures too (Mota-Rogas *et al.*, 2018). In view of these, (FAWC, 1993) also emphasized on determining the relationships between husbandry practices and cow health as important factors to develop protocols for husbandry that will improve welfare. Although animal welfare scores, scales and modules have been developed and

implemented in the developed countries, the outreach of animal welfare and awareness have not received due importance in developing countries like India. Therefore, the development of gaushalas aims to improve the overall livestock keeping practices and animal welfare for the sheltered cows in a sustainable manner and keeping this in view the aim of the present study was to investigate the level of adoption of animal welfare practices in the gaushalas of study area.

### Material and Methods

The study was conducted in Karnataka State during the year 2017-18 in forty (40) gaushalas, selected randomly out of total eighty (80) registered gaushalas present throughout the state. The forty selected gaushalas were further categorized as small (12), medium (18) and large sized (10) gaushalas based on the herd size i.e. small (below 50), medium (51-150) and large (above 150) animals respectively. The primary data was collected from the concerned individuals/stakeholders involved in maintaining the gaushalas through well-developed interview schedule. Animal Welfare Practices (AWPs) was operationally defined as the degree to which a respondent actually adopted Animal Welfare Practices in their gaushalas at the time of investigation and it was determined by a simple adoption schedule developed by the investigator. The schedule contained 18 practices. Against each of the practices, there were two columns representing 'adopted', and 'not adopted' with score of 1 and 0 respectively. The adoption score was then converted into adoption index by applying following formula-

$$\text{Adoption index} = \frac{\text{Obtained Adoption score}}{\text{Maximum Obtainable Adoption score}} \times 100$$

According to the final scores values obtained, the gaushalas were categorized into three groups namely, 'low', 'medium' and 'high' adopter categories considering the mean and standard deviation. The total score obtained by gaushalas was calculated and with the help of following formula their overall adoption level was calculated.

### Result and Discussion

Results presented in Table 1 revealed that, the sample of forty gaushalas comprised of total herd size of 6640 cattle which was categorized into small, medium and large sized gaushalas. Based on the herd size further it was observed that, in all the gaushalas more than 95.00 percent of the herd composition was indigenous cattle followed by a meagre 5.00 percent of crossbred. Among the indigenous cattle maintained in the gaushalas, most of them were old and unproductive cattle in small (32.00%), medium (45.00%) and large sized gaushalas (37.00%). A notable percentage (16.00%) of the indigenous cattle were found to be 'in milk' population in all the gaushalas whereas, among the crossbred cattle the 'in milk' population were

composed of 52.00 percent, 45.00 percent and 37.00 percent in small, large and medium sized gaushalas respectively.

**Table 1:** Herd composition in Gaushalas (n=40)

S. No.	Category	Small				Medium				Large			
		Indigenous		Crossbred		Indigenous		Crossbred		Indigenous		Crossbred	
		Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
1	In Milk	100	16	15	52	358	15	45	37	500	16	80	45
2	Dry	120	19	10	34	400	16	25	20	750	23	25	14
3	Calves	85	14	4	14	190	8	10	8	275	9	11	6
4	Heifer	80	13	0	0	240	10	0	0	350	11	0	0
5	Bull/Bullock	35	6	0	0	165	7	2	2	150	5	8	4
6	Old/Unproductive	200	32	0	0	1112	45	40	33	1200	37	55	31
	Total	<b>620</b>	<b>100</b>	<b>29</b>	<b>100</b>	<b>2465</b>	<b>100</b>	<b>122</b>	<b>100</b>	<b>3225</b>	<b>100</b>	<b>179</b>	<b>100</b>
	Total Percent	<b>96</b>	<b>-</b>	<b>4</b>	<b>-</b>	<b>95</b>	<b>-</b>	<b>5</b>	<b>-</b>	<b>95</b>	<b>-</b>	<b>5</b>	<b>-</b>

### Adoption Level of Animal Welfare Practices in Gaushalas

From the results shown in Table 2, it is interpreted that majority (70.00%) in large sized gaushalas, followed by 44.00 percent in medium and 25.00 percent in small gaushalas adopted treatment for lameness (abnormality of movement in cattle). Similar observations were found in the study conducted by Flower and Weary (2016) and Sharma *et al.* (2019) due to the reason that, majority of the large gaushalas had regular access to veterinary services as compared to small and medium sized gaushalas. Majority (70%) of large sized gaushalas provided treatment against integument alterations (hairless patches and lesions/swellings) on the skin of dairy animals as compared to medium and small sized gaushalas. The observations were in line with the studies conducted by Wechsler *et al.* (2000), Whay *et al.* (2003) and Kielland *et al.* (2010). Exactly 60 per cent of large sized, 44 per cent of medium and 25 per cent of small sized gaushalas gave treatment against overgrowth of claw and hoof. Similar incidences were observed in the studies of Huxley and Whay (2006), Platz *et al.* (2007) and Sharma *et al.* (2019). TerWee *et al.* (1989) also reported in their study that 90% of lameness problems in cattle were caused due to claw abnormalities. A considerable majority (60%) of large sized gaushalas, 50 per cent of medium and 25 per cent of small size gaushalas adopted treatment against nasal or ocular discharges. The findings were in correlation with the studies conducted by Sharma *et al.* (2019) in 54 shelters (gaushalas) located in the six states of India (Gujarat, Maharashtra, Rajasthan, Punjab, Haryana and Himachal Pradesh) for assessment of animal welfare. In case of majority (90%) of large sized gaushalas there was provision of adequate floor space in gaushalas for standing, resting, loafing, feeding, water intake and ventilation. Blom (1983) also reported that joint injuries occurred due to the restrictions of floor space and lying areas. The results were in agreement to the works of Otten *et al.* (2016) and Von Keyserlingk *et al.* (2012). A large majority (90%) of

large sized gaushalas followed by equal majority of (83%) of medium and small sized gaushalas had access to leveled flooring with non-slippery material and provision of channels for urine/dung drainage.

**Table 2:** Distribution of gaushalas according to their adoption level in animal welfare practices (n=40)

S. No.	Animal Welfare Practices	Small		Medium		Large	
		Adopted	Not Adopted	Adopted	Not Adopted	Adopted	Not Adopted
		F (%)	F (%)	F (%)	F (%)	F (%)	F (%)
1	Treatment for lameness	3 (25%)	9 (75%)	8 (44%)	10 (56%)	7 (70%)	3 (30%)
2	Treatment against integument alterations (hairless patches and lesions/swellings) on the skin of dairy animals	4 (33%)	8 (67%)	8 (44%)	10 (56%)	7 (70%)	3 (30%)
3	Treatment against teat and udder injuries in dairy animals	4 (33%)	8 (67%)	8 (44%)	10 (56%)	7 (70%)	3 (30%)
4	Treatment against overgrowth of claw and hoof	3 (25%)	9 (75%)	8 (44%)	10 (56%)	6 (60%)	4 (40%)
5	Treatment for discharges (nasal, ocular)	3 (25%)	9 (75%)	9 (50%)	9 (50%)	6 (60%)	4 (40%)
6	Treatment of sick/dull animals in the herd/farm	8 (67%)	4 (33%)	15 (83%)	3 (17%)	8 (80%)	2 (20%)
7	Disbudding of calf/dehorning of cattle	7 (58%)	5 (42%)	11 (61%)	7 (39%)	8 (80%)	2 (20%)
8	Ear marking of cattle for identification	1 (8%)	11 (92%)	2 (11%)	16 (89%)	2 (20%)	8 (80%)
9	Branding of animals	11 (92%)	1 (1%)	16 (89%)	2 (11%)	8 (80%)	2 (20%)
10	Provision of adequate floor space in Gaushalas for standing, resting, loafing, feeding, water intake and ventilation.	8 (67%)	4 (33%)	14 (78%)	4 (22%)	9 (90%)	1 (10%)
11	Continuous tying of animals in Gaushalas	7 (58%)	5 (42%)	6 (33%)	12 (67%)	2 (20%)	8 (80%)
12	Allowing animals for free movement and grazing	5 (42%)	7 (58%)	12 (67%)	6 (33%)	10 (100%)	0 (0%)
13	Access to levelled flooring with non-slippery material and provision of channels for urine/dung drainage.	10 (83%)	2 (17%)	15 (83%)	3 (17%)	9 (90%)	1 (10%)
14	Management practiced to protect animals during extreme summer or chilled winter conditions.	3 (25%)	9 (75%)	9 (50%)	9 (50%)	6 (60%)	4 (40%)
15	Protection of dairy animals from its feeding to toxic plants and other harmful substances (i.e. plastic, garbage etc.)	11 (92%)	1 (8%)	17 (94%)	1 (6%)	10 (100%)	0 (0%)
16	Provision of necessary assistance by veterinarian/other trained person during parturition in case of difficulty	8 (67%)	4 (33%)	15 (58%)	3 (17%)	9 (90%)	1 (10%)
17	Proper handling during expression of agonistic behaviors (such as aggressive and submissive behaviors)	8 (67%)	4 (33%)	14 (78%)	4 (22%)	9 (90%)	1 (10%)
18	Maintenance of good human-animal relationship (approachable distance)	9 (75%)	3 (25%)	16 (89%)	2 (11%)	9 (90%)	1 (10%)

F- Frequency (Figures in parenthesis indicates percentages)

Slippery floors affected the behavior and lead to injuries due to falls (Rushen and De Passillé, 2006). A majority (90%) of large sized gaushalas followed by medium (89%) and small (75%) sized gaushalas maintained good human-animal relationship (approachable distance). Similar evidences were reported by De Vries *et al.* (2014) wherein cows that were standing at the feeding manger were approached at the front at a rate of one step per second, starting at 2 m from the manger. However, Rousing *et al.* (2004) highlighted

that dairy cows with tick lesions have been shown to express more kicking behavior and a higher avoidance distance.



**Fig. 1:** Observations related to animal welfare practices adopted in gaushalas



**Fig. 1.1:** Feeding in manger



**Fig. 1.2:** Good quality of concentrate feed



**Fig. 1.3:** Separate housing for calves



**Fig. 1.4:** Separate housing for sick animals



**Fig. 1.5:** Full hand milking



**Fig. 1.6:** Feeding supplements to the animals



**Fig. 1.7:** Cleaning the udder of cow

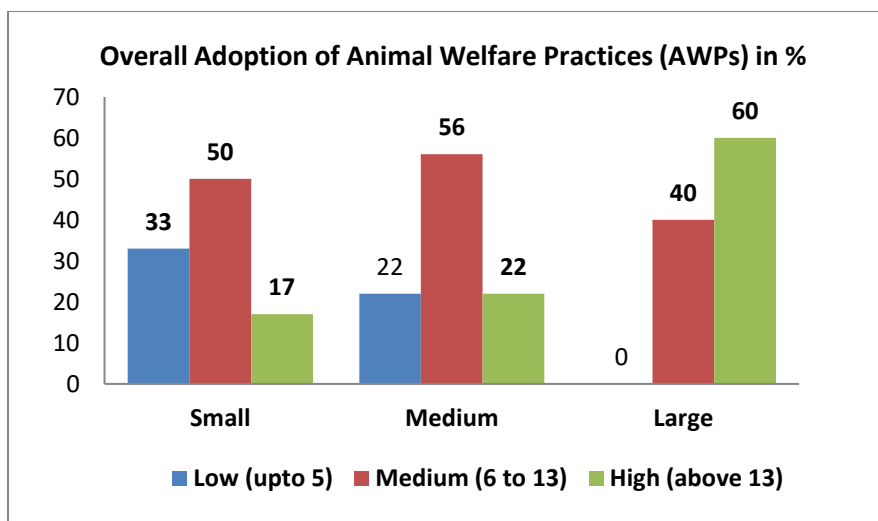
### Overall Adoption Level of Gaushalas in Animal Welfare Practices

Data presented in Table 3 and Fig.2 indicated that the distribution of gaushalas according to their overall adoption of animal welfare practices revealed that in case of large sized gaushalas majority of 60.00 percent belonged to high adopter categories and 40.00 percent belonged to medium adopter categories. In medium

sized gaushalas, a majority (56.00 %) of them belonged to medium adopter category and equal percent belonged to small (22.00%) and high adopter category (22.00%). Among small sized gaushalas exactly half (50.00%) of the gaushalas belonged to medium adopter category, another 33.00 percent and 17.00 percent belonged to low and high adopter category, respectively. This clearly indicates that majority of the small and medium sized gaushalas were not completely aware of the Animal Welfare Practices (AWPs). It may be due to few major reasons like lack of resources and adequate training were the major reasons for non-adoption of AWP in gaushalas. The observations were in agreement to the observations of Gupta (2017), where more than half of the respondents (55.83%) possessed medium level of adoption of animal welfare practices, while 20.83 per cent and remaining 23.34 per cent had low and high level of adoption of animal welfare practices respectively, among dairy farmers in central plain zone of Uttar Pradesh.

**Table 3:** Distribution of gaushalas according to their overall adoption level in animal welfare practices (n=40)

S. No.	Adoption categories	Small		Medium		Large	
		Frequency	Percent	Frequency	Percent	Frequency	Percent
1	Low (upto 5)	4	33	4	22	0	0
2	Medium (6 to 13)	6	50	10	56	4	40
3	High (above 13)	2	17	4	22	6	60
	<b>Total</b>	<b>12</b>	<b>100</b>	<b>18</b>	<b>100</b>	<b>10</b>	<b>100</b>



**Fig. 2:** Overall adoption of AWP by the gaushalas

**Conclusion**

In case of overall adoption of animal welfare practices (AWPs), most of the large sized gaushalas performed better than medium and small sized gaushalas. The non- adoption of AWP in small and medium gaushalas was attributed to lack of resources and inadequate training facilities. The major constraints of gaushalas

were inferior quality of bulls, limited access to veterinary services and inadequate funds/capital and training. The identified perceived important factors affecting the performance of gaushalas were, regular financial support, good infrastructural facilities and government support for training and development. The present study recommends that there is a strong need of sensitizing and training the stakeholders of gaushalas to implement the management as per animal welfare protocols through adequate extension, policy and financial support for holistic development of gaushalas in the country.

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### Conflict of Interest Statement

Authors declare no conflict of interest.

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