

Community Calf Pens-Economical and Beneficial Managerial Step for Improved Growth Rates of Calves

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Abstract

Community calf pens are very beneficial especially for the poor farmers of developing countries to isolate the newly born calves till weaning. Same practices are used at commercial dairy farms. In this experiment female buffalo calves (N = 10) were selected and divided into two equal groups A and B (n = 5) and observed their daily weight gain for one month. Calves of group A were placed in community calf pens and group B were under typical rural farmer's practices. Calves of group A, had showed more average weight gain at the end of one month as compare to group B. The price of wooden community calf pen is 10 times less then to that of steel calf pens used at commercial farms. It can easily be shifted from one calving house to other in the village. Keeping the calves isolated from each other decreased the risk of the worm infestation, control feeding, no bad habits like licking each other and walls, other respiratory and enteric diseases. The leading objective of this study was to facilitate poor farmers with least cost calf pen so that calves can grow in a healthy environment.

Keywords: Community Calf Pens; Buffalo; Calves; Weight Gain; Poor Farmers

Introduction

Calves are the backbone of every dairy farm. Rearing of calves is very important from day one because they have to replace old animals. Globally there are many housing systems that are in practice. But most of farmers try to isolate them depending on many factors including personal preferences, management style, space constraints, location, climate, and cost [1]. In Europe 60% calves are reared individually during first two months [2]. A good calf housing facility can help to provide well grown replacement stock. Calf pens are one of the best managerial practices for improving the growth of calves in early age [1]. Calf pens are small enclosure for the isolation of the calves from newborn to weaning. They have been used for many years throughout the world at commercial farms. Before the weaning the calf immune system is weak and not able to fight against different pathogens [2]. Surveys showed that time period from birth to weaning as the one of the greatest risk for calves [3]. Calf pens are used to move away the calves from each other and they show improve growth, health and no effect on the behavior. Proper design of pens to maintain a dry, comfortable environment is important for the health and growth of calves [4]. Individual housing helps us what is going in and coming out from each individual. This helps us monitor their growth and individual

illness. If calves are in group they can spread infection quickly to each other while individual have isolate pens allow us to know certainly which calf is scouring (loose manure) or not eating [1]. Improved growth and performance and reduced mortality when calves are housed in pens compared to other methods first 6 - 8 weeks [4,5]. In Pakistan mostly rural farmers are poor and could not afford expensive individual calf pens. They usually used old practices of rearing.

Materials and Methods

Wooden community calf pens were made to isolate the calves. Woods and bamboos were used in making calf pens. These materials were easily and readily available in every house. The main purpose of this pen was affordability and least cost for farmers. Wood is good insulator than steel against harsh weather. But at dairy farms steel calf pens were used because they could manage their higher cost and shifted them indoor to outdoor. But for poor farmers it was difficult to manage. The dimensions of wooden calf pen designed were 1.5 meter length, 1 meter width and 1 meter height. Floor of wooden pen was 9 inches from floor and to keep floor dry rice straw was used as shown in figure 1 and 2. A total of 10 female buffalo calves were selected and equally divided into two groups A and B. By using weighing balance birth weight of each calf was recorded. These two groups were observed for weight gain, for the period of one month. Keeping all the factors same water availability, milk, one group was under calf pens practice and other calves group was kept under typical farmer practices. Statistical analysis was done by using Open epi software. Two sample independent t test was done. The P-value less than "0.05" was considered significant.



Figure 1: Wooden community calf pen near to completion.

Results and Discussion

Data from this experiment showed that calves that were kept in the wooden calf pens gained more average daily weight at the end of one month as shown in table 1. It was due to because the calves in pens were restricted at one place. They could not licked walls, muddy floor and skin of other calves as compare to other group of calves that was kept under typical farmer's practices. Keeping the calves isolated from each other decreased the risk of the worm infestation, control feeding, no bad habits like licking each other and walls, other respiratory and enteric diseases [6]. For example, it is reported that pre weaned calves housed in pens had lower prevalence of Crypto-



Figure 2: Wooden community calf pen at farmer's day.

sporidium, Eimeria [7]. A drawback to open housing for calves is that they can develop cross-suckling behaviors [8]. Avoiding all these things, improve health and body weight help indirectly in farm economics. Secondly the pens that are using at commercial dairy farms are expensive and not affordable for poor farmer. The price of each wooden community calf pen was 10 to 15 times reduced than that of steel pens. Because labour and materials used in it were already available at farmer's house. The major purpose of this wooden community calf pen is that it can be shifted from one house to other easily. The farmer who is doing calving at home is shifted to that home of village for about at least first month and then other and so on. It is very effective and least cost for the poor farmers of developing country like Pakistan. The availability of community calf pens depend on the animal population of a village.

Groups	Average birth weight (Kg* ± SD**)	Daily average weight gain for 1 month (Kg ± SD)	P-value
A Calves with pens (n = 5)	26.68 ± 0.74	0.473 ± 0.018	0.03
B Calves without pens (n = 5)	26.80 ± 0.65	0.441 ± 0.022	

Table 1: Comparison between the weights of calves kept in community calf pens and without pens.

*Kg = Kilogram, **SD = Standard Deviation.

Conclusion

Findings of this study demonstrated that wooden community calf pens provide healthier environment for calf growth. Calves that were kept in pens showed better average daily weight gain and lower occurrence of worm infestation and bad habits like licking walls, body of other calves. Most importantly much more economical for the poor farmers of developing countries as compare to commercially used iron pens at dairy farms. Wooden community calf pen easy to make at home by using woods and bamboos, one calf pen can be used by different farmers at the time of calving.

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Conflict of Interest

There is no conflict of interest.

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