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SURVEY OF NEWLY BORN CALVES MANAGEMENT PRACTICE IN NEW VALLEY GOVERNORATE

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ABSTRACT

The objective of this work was to conduct a broad survey of newly born calves management practices that have an effect on animal behavior and mortality. Animal's farms were visited during the summer of 2019 in new valley government. Data were collected on 70 farms to answer the questions about Calving pen presence, calves raising method, colostrum feeding number or volume, mortality rate, care of newly born animal, weaning age and method used. The obtained data showed that, 85% of Calves were raised by the owner till fatting and 13 % were pursued from the market, A total of 95% of owners haven't calving pen in thier frame beside that, 73% of them were fed all colostrum during 6 hours after parturition and 60% of them were feed colostrum two days. On the other hand, 67% of owners did not used disinfectant after parturition which associated with 22% mortality rate of newly born calves. Finally data obtained show that, about 75% of owners were weaned the animal more than 4 month with gradually weaning type.

Keywords: Newly born calve management, weaning method, calf rearing.

INTRODUCTION

There is increasing societal concern about the newly born animals management to enable the farming industry to effectively respond to these concerns, there is a need for more in-depth data on management practices that are actually being used, (Fulwider *et al.,* 2008). The conditions at calving represent a major hazard for the health of the newborn calf. Calving requires special facilities (such as a calving pen) designed to minimize stress and ensure the comfort and hygiene of the cow and newborn calf. Moreover, housing management of calves pen, area per calf, number of calve per pen; adequate and well-balanced diet (colostrum, milk, and calf starter), and social contact can influence their lying behavior, feeding status, and social behavior with negative effects on their growth and development, because to maintain body integrity while growing, calves need: movement and exercise space for bone and muscle

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development (Algers *et al.,* 2006), beside that, the housing of dairy calves can be done individually, in pairs or groups. De Paula Vieira *et al.* (2010), benefits attributed to paired and group-housing are reduced labor requirements per calf; improved social behavior of calves (Duve and Jensen, 2012), higher intakes of starter feed and gains (De Paula Vieira *et al.,* 2010). The data about newly born animal management in New valley governate are limited so that, the objective of our study was to survey a larger number of farm and determine the newly born calve management point and its effect on their health status or mortality rate.

MATERIALS AND METHODS

In total, 70 animal farms located in New Valley governate {Mut (20), AL-Maasara (5), Asmant (3), Al-Gadida (2), Al-Eweina (3), AL-sheikh Wali (8), AL-Hendaw (2), in AL-Rashda (3), El kharga (17), Sanaa (4), paris (1) and Polaq (2)} were assessed in the summer periods 2019. Some of these farms were of single type animals (male or female or mixed) while others were of mixed type animals (sheep and cattle). Farm number was in line with Espejo and Endres (2007) who visited 50 dairies in Minnesota and Cook *et al.* (2004) and Schreiner and Ruegg (2002) who conducted field studies on 12 and 8 dairies, respectively, in Wisconsin.

In order to Assess Newly born animals managemental point which done by the owner and its effect on calves behavior and health, some questions were asked which contain different points as calving pen (single calve pen), but (grouped calve pen) are not present.

Calve raising method., new born animal perished, still in the farm to fattening, not determined, (Die of newly born animals) die within 3 month(without calving pen), die within 3 month (with calving pen), not die within 3 month, colostrum (all colstrum (first 6 hour), all colstrum (normal with its mother), take part of it), Weaning age (1-2 month), (2-4 month), more), weaning type was (complete, incomplete, gradual) while, First feed by itself(1-2 weeks alone), (3-5w alone), (1-3w with other), Forced feeding (yes<15, yes>15, no), if the mother die (foster mother, milk replacer), First time access to feeding (<1 weeks, >1weeks, not determined) and First time access water (<1 weeks,>1 weeks) All questionnaires were individually examined and the data were recorded in (Microsoft Excel 2010) to get the percentage of each parameter.

RESULT

Table 1: Managemental point done by owner in his farm which obtained from survey.

Calving pen	
Present (single calve pen)	2%
Present (grouped calve pen)	3%
Not present	95%
Calf-Raising Method	
new born animal perished	13.0%
still in the farm to fattening	85.0%
not determined	2.0%
Colostrum feeding volume	
All colostrum (first 6 hour)	73%
All colostrum (normal with its mother)	9%
Take part of it	18%
Colostrum feeding number	
One feeding per day	24%
Two feeding per day	60%
Ad-libtum	16%
Die of newly born animals	
Die within 3 month (without calving pen)	20%
Die within 3 month (with calving pen)	2
Not die within 3 month	78%
Disinfection after birth (care of newly born animal)	
Used disinfection (antibiotic or iodine)	23%
Not used	67%
Weaning Age	
1-2 month	1%
2-4 month	22%
More	77%
Weaning type	
complete	2%
incomplete	23%
Gradual	75%
first time access to feeding	
< 1weeks	93%
> 1 weeks	5%
not determint	2%
First time access water	
< 1weeks	**90%**
> 1 weeks	8%
not determint	2%

DISCUSSION

1- Calf-Raising Method

85% of the owners raised their own calves from birth to entry into fattening cycle, while, 13% of owners purished it, this data in accordance with previous finding of. Fulwider *et al.* (2007) who mentioned that, half of the dairies raised their own heifer calves from birth to entry into the milking herd (50.4%).

2- Colostrum Feeding

Colostrum management remains one of the most serious hazards for calf welfare (European Food Safety Authority, 2006). In the current survey there was 82% of calves were fed colostrum as whole volume and given it within 6 hours after parturition by the owner or left the calve with its dam to take it, while 18% from the owners was take apart of this colostrum and spread to the neighbor as a gift. (Table1), this data agreed with finding of Fulwider *et al.* (2007) who find that, Colostrum was fed to calves on 94.7% of dairies.

More over, 76% of producers who raised their own calves provided more than 1 feeding of colostrum per day while, 24% of owner feed it one per day. In contrary, Hopkins and Quigley (1997) reported that calves fed 3.8 L of colostrum in 1 or 2 feedings were equally effective in providing passive immunity. The mean colostrum consumption for calves fed colostrum once and to appetite was 3.0 L, or 8% of BW. Calves fed 2 or 2+ times in 24 h consumed 3.2 and 3.3 L, respectively. Jaster (2005) found that Jersey calves provided with 2 colostrum feedings of 2 L at 0 and 12 h had higher IgG1 than calves fed 4 L at birth.

Data puplished on this topic about timing of colostrum feeding was in agreement with data of Weaver *et al.* (2000) who reported that, the timing of the first meal of colostrum is critical because optimal absorption of immunoglobulins occurs before 4 h of age and decreases rapidly after 12 h. and Kehoe *et al.* (2007) stated that, it is likely that many calves received their first hand-fed colostrum more than 6 h after birth. These results are similar to those of a recent United States survey that reports that 43.6% of farms feed calves colostrum within 2 h after birth, and 51% feed colostrum between 2 and 6 h after birth. Beside that, in the herds surveyed in our study, colostrum from primiparous cows was used in 94.7%, which is slightly higher than in United States dairy herds. Franklin *et al.* (2003) reported that, Calves that get colostrum only during nursing may not receive a proper quality or amount of colostrum in a timely manner, which increases risks of failure of passive transfer., National Farm Animal Care Council, (2009) mentiond that, the calf receives its first colostrum feeding no more than 6 h after birth. And In 36.8% of herds surveyed, the disinfection of the newborn's navel was not done despite recommendations.

3- Feed and water accesses

Obtained data showed that, about 93% and 90% of survey farm get access to feed and water to its calve less than one week age and it was agreed with of Kertz *et al.* (1984) who found that, Free water intake is essential for proper rumen function and for early intake of dry feed and should therefore be made available within the first week of life. Also, USDA, (2008) found that, in the herds surveyed, calves had access to concentrate at a median age of 7 day after birth and the median amount offered was 1 kg. In the United States, average age for grain access is similar to Quebec herds (8.5 days) about 9.6% of farms reported not giving un-weaned calves' access to water.

4- Calving pen and calf mortality

The conditions at calving represent a major hazard for the health of the newborn calf. Calving requires special facilities (such as a calving pen) designed to minimize stress and ensure the comfort and hygiene of the cow and newborn calf. (USDA, 2008).

4.1 Calving pen

Data illustrated in table (1) show that, Calving pen not used in 95% in surveyed farm which nearly same with finding of Vasseur *et al.* (2010) who indicated that, Calving pens were not used in 51.3% of surveyed herds and instead, the cows calved in tie-stalls, while, away form data of USDA, (2008), who reported that, 29.9% of United States farms do not have a calving area

4.2 Individual or group rearing:

Our data in table (1) showed that, the single or grouped calving pen was similar in percentage as 2% or 3% respectively which disagreed with finding of Vasseur *et al.* (2010) who find that, unweaned calves individually housed reperesent 87.9% of surveyed farms.

One of the most contentious calf welfare issues is the use of individual housing. (Rushen *et al.,* 2008). The claimed advantages of individual housing are reduced transmission of diseases.

4.3 Disinfections used

In 67% of herds surveyed, the disinfection of the newborn's navel was not done which disagreed with recommendations and finding of (National Farm Animal Care Council, 2009). Who find, in 36.8% of herds surveyed, the disinfection of the newborn's navel was not done despite recommendations. The early disinfection accelerates drying up of the umbilicus to reduce infections so that calf morbidity (respiratory and enteric diseases) and mortality are decreased (Quigley *et al.,* 1996) and the failures in treating the navel can generate infection and hernias, cause omphalitis and myiasis, while also allowing pathogenic microorganisms to

5- Weaning age and type

Weaning and separation between a cow and her calf imposes stress on both which may lead to decrease rumination after separation occurs (Lidfors, 1996). So that, weaning should be managed to avoid decreased nutrient intake and weight loss as well as frequent vocalization, which is a sign of weaning distress. (Weary *et al.,* 2008) and Weaning should be gradual and based on the calf's ability to eat solid food. In commercial conditions, dairy calves are normally weaned at much younger ages than in the wild, which is around 6 month. (Phillips, 2001).

Our obtained data showed that 75% from owners used gradual weaning and age of weaning as 2-4 month was 22% which agreed with (USDA, 2008) who find that, gradual weaning was used by 89.6% of farm which done by progressively reducing the quantity of milk or substitute. However, 16.5% used abrupt weaning and the median age at weaning was 7 week. Beside that, delayed separation (after 14 d) induces better weight gain and better calf health and influences the development of the calf's social behavior compared with separation at 1 d (Flower and Weary, 2001)

6- Mortality percentage

Data illustrated in table (1) show that, the percentage of newly born animals dies within 3 month was very high (20%) this data may be related to some reason as:

1. Grouped calving pen (3%) which may associated with diarrhea (Frank and Kaneene, 1993), respiratory problems (Svensson *et al.,* 2003) and the risk of Salmonella infections (Losinger *et al.,* 1995) is lower when calving occurs in individual calving pens compared with in group settings.

2. High percentage of normal parturition 94% with only two visits per day 61 % so the level of supervision may be unsuitable for cows at parturition because most parturition occur during the night, (von Keyserlingk and Weary, 2007) and the regular surveillance of cows about to calve is necessary to ensure assistance at calving when difficulties occur, to reduce perinatal mortality (Mee, 2004).

3. Apart of colostrum was taking and spreading by 18% of owners to neighbor which may lead to increase the rate of mortality due to calves fed 3.8 L of colostrum in 1 or 2 feedings were equally effective in providing passive immunity. (Hopkins and Quigley, 1997) and calves provided with 2 colostrum feedings of 2 L at 0 and 12 h had higher IgG1than calves fed4L at birth. (Jaster, 2005), and to ensure that the calf receives its first colostrum feeding no more than 6 h after birth Animal (National Farm Care Council, 2009) positive effects based on the interaction between the cow and her calf during the first hours of life of the newborn (Toledo *et al.*, 2007) suggesting that 60% of newborns may consume colostrum in an uncontrolled manner. In these situations, the colostrum intake in an acceptable amount and time can be reduced since the newborn vigor, concentration of immunoglobulin correlations with intake (Franklin *et al.*, 2003).

CONCLUSIONS

The majority of government of persons were making a good effort to quickly feed all colostrum and weaned the calve more than 4 month While, on the other hand, the majority of producers don't had calving pen or used disinfectant after birth which had resulted in increase the newly born calves mortality rate and decreasing its well-being.

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دراسة استقصائية (استبيان) للممارسات الإدارية للعجول حديثى الولادة في محافظه الوادي الجديد

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الهدف من هذا العمل إجراء مسح واسع لممارسات إدارة العجول حديثة الولادة التي لها تأثير على سلوك الحيوان ونفوقه. تمت زيارة مزارع الحيوانات خلال صيف عام ٢٠١٩ في محافظة الوادي الجديد. تم جمع البيانات من ٧٠ مزرعة للإجابة على أسئلة حول وجود حظيرة العجول ، وطريقة تربية العجول ، وعدد أو حجم تغذية اللبأ ، ومعدل النفوق ، ورعاية الحيوان حديث الولادة ، وعمر الفطام والطريقة المستخدمة.

أظهرت البيانات التي تم الحصول عليها أن ٨٥٪ من العجول تمت تربيتها من قبل المالك حتى التسمين و ١٣٪ تمت ملاحقتها من السوق ، وإجمالي ٩٥٪ من أصحاب العجول لم يتم إطعامهم بالكامل اللبأ خلال ٦ ساعات بعد الولادة و ٦٠٪ منها كانت تغذي اللبأ مرتين يومياً. من ناحية أخرى ، فإن ٦٧٪ من المالكين لم يستخدموا المطهرات بعد الولادة وهو ما يرتبط بمعدل وفيات ٢٢٪ للعجول حديثي الولادة. أخيرًا ، أظهرت البيانات التي تم الحصول عليها أن حوالي ٧٥٪ من أصحاب الحيوانات فطاموا الحيوان لمدة تزيد عن ٤ أشهر بنوع الفطام التدريجي.

الكلمات المفتاحية: إدارة العجول حديثاً ، طريقة الفطام ، تربية العجول.