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Days in milk at exiting in Iranian Holstein dairy cows

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Introduction Exiting is the departure of cows from the herd for several reasons. Cows are exited for a variety of reasons. The predominant reasons for exiting are reproduction (i.e., failure to conceive), health, and low production (Bascom and Young, 1998). Half of the herd removals occur involuntarily and prematurely because of health disorders (Beaudeau *et al.*, 2000). On the other hand, the risk of exiting is not consistent across all stages of lactation. Cows experience the highest risk shortly after calving (Fetrow *et al.*, 2006). Cow longevity is highly related to dairy farm profit. Only a few previous studies have characterized exited cows based on the associations between exiting reasons and cow economic characteristic. One of this important characteristic is the lactation stage when the cow is exited. There is, therefore, a need to evaluate the overall exiting reasons and the stage of lactation the cows exited the herd. The objective of this study was to study the days in milk at exiting in Iranian Holstein dairy cows.

Materials and methods The exiting data from five large dairy farms during 1999 until 2006 were used. During the period the median number of cows in the study herds was 500. Data on cow and herd identification, calving and exiting dates were recorded. The exiting reasons were sold for dairy purposes, low milk production, feet and legs problems, reproductive problems, death, mastitis, disease, and udder problems. The dependent variable of interest was the number of days between calving and exiting. The data on the days in milk (DIM) when a cow was exited for the defined category were analyzed using general linear models. The means were separated using Tukey multiple range test. The distribution analyze for when a cow was exited during the lactation period was done using the statistical software package JMP (SAS Institute Inc., NC, USA).

Results Figure 1 shows DIM at exiting for different exiting category. Calving-to-exiting was impacted by exiting category ($P < 0.0001$). Calving-to-exiting intervals (mean \pm SE) were 107 ± 13 , 117 ± 11 , 158 ± 4 , 161 ± 12 , 202 ± 10 , 230 ± 33 , 242 ± 9 , and 379 ± 5 d for udder problem, mastitis, diseases, feet and leg problems, sold for dairy purposes, death, low milk production, and reproductive problems, respectively. Days in milk when cows were exited due to udder problems and mastitis were lower compare with the other categories. These results are in agreement with another study on reasons for exiting in French cows (Seegers *et al.*, 1998). In general, DIM at exiting averaged 217.20 d with standard error of mean 2.66 for the all exited cows (Figure 2). The median was 183 d and 25% and 75% quartiles were 41.75 and 350 d, respectively. Its distribution showed a progressive decrease in frequency.

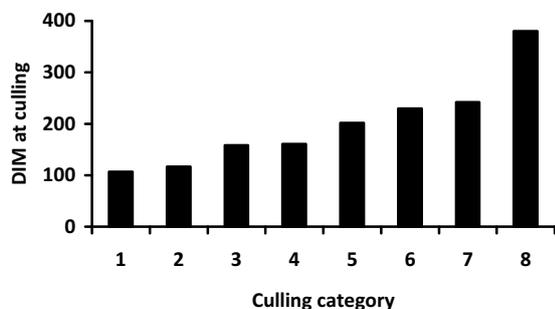


Figure 1 DIM at exiting for different exiting category. (1= udder problem, 2= mastitis, 3= diseases, 4= feet and leg problems, 5= sold for dairy purposes, 6= death, 7= low milk production, 8= reproductive problems)

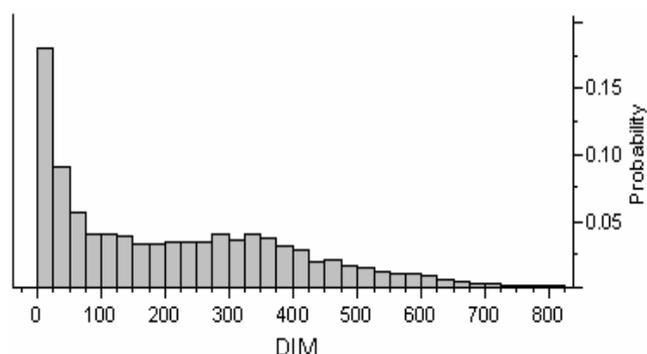


Figure 2 DIM at exiting

Conclusions The result of this study demonstrated that cows were exited differently according to the exiting category. Udder problem and reproductive problems had the lowest and greatest calving-to-exiting interval. The median time when a cow was exited suggested that it was preferred to exit a cow far after milk peak.

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