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Reasons for exiting in Iranian Holstein cows

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Introduction Exiting is a complex issue, and many factors are involved in the decision to exit a cow. Farmer consider many cow factors, such as age, stage of lactation, milk production, health status, disposition, and reproductive performance, when determining whether or not a cow should be exited (Beaudeau *et al.*, 2000). The exiting decision may also be affected by economic factors, such as milk price, the price of exited cows, and the price and availability of replacement heifers. In addition, the attitudes of farmers have an effect on which cows are removed from a herd (Bascom and Young, 1998). Iranian dairy production has undergone significant and considerable structural changes during the last two decades with creation of larger herds. Replacement of dairy cows is a major expense for producers. To keep a cow until a higher parity allows the farmer to spread over a longer period the difference between the production cost of the replacement heifer and the carcass value of the exited cow (Seegers *et al.*, 1998). In Iran, the increased price for replacement heifer in the last several years has increased the interest in increasing productive life and there by lowering exiting rates. Analyses of the reason of exiting are needed to predict herd performance and maximizing herd profit. The objective of this study was to study the reasons for exiting in Iranian Holstein cows.

Materials and methods The exiting data from six large dairy farms during 1999 until 2006 were used. All cows in the study were Holstein. Milking occurred 2 or 3 times daily in milking parlour. During the period, the median number of cows in the study herds was 600. Data on cow and herd identification, calving, and exiting reason along with the date were recorded. The dependent variable of interest was age in days. The age in days was defined as the number of days between birth and exiting. The data were analyzed using the statistical software package JMP (SAS Institute Inc., NC, USA). The model included herd, number of abortion during life, calf's birth weight in the last calving, parity at exiting, twinning in the last calving, calving class (eutocia, dystocia, stillbirth, and abortion), cumulative first 60 days milk production in the last lactation, exiting reason (including sold for dairy purposes, low milk production, feet and legs problems, reproductive problems, death, mastitis, disease, and udder problems), birth date, season of year when cow was exited, and also days open.

Results The result showed that herd, number of abortion during life, parity, exiting category, birth date, and also days open had significant impact on age in days for exited cows ($P < 0.05$). Age at exiting averaged 6 years and 354d. The median was 5 years and 179 d, and 25% and 75% quartiles were 3 years and 244 d, and 8 years and 175 d, respectively. There was variability in survival between herds ($P < 0.001$). In terms of voluntary exiting, the exiting policy was different among farmers. Age in days increased with number of abortion during cow's life ($P < 0.001$). Increased days open was associated with increase in age in days at exiting ($P < 0.001$). The cow's risk of being exited was impact by the exiting reason ($P < 0.05$; Figure 1). Parity at exiting averaged 3.185. The median was 3 and 25% and 75% quartiles were 1 and 5, respectively.

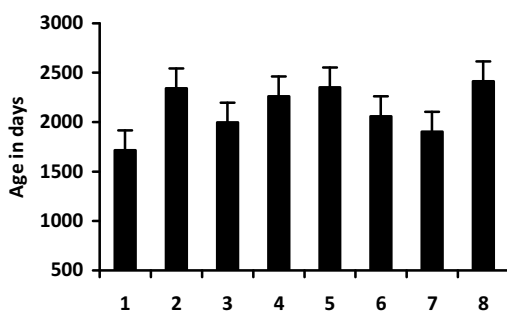


Figure 1 Effect of exiting reasons on age in days. (1= sold for dairy purposes, 2= low milk production, 3= feet and leg problems, 4= reproductive problems, 5= death, 6= mastitis, 7= diseases, 8= udder problem)

Conclusions The results of the present study demonstrate that sold for dairy purposes followed by diseases, and feet and leg problems were the main reasons to exit cows younger than the others. This research also indicates that dairy farmers consider many factors when deciding whether and when to exit a cow.

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