

**Abstract:**

This study was carried out to survey the effect of breeding programs on longevity of dairy cows in Iran. The total of 538873 animal records was used from 1990 to 2013. Either animals survived in the herd or unrecorded ones were considered as censored animals, which consisted of 34.23% of records. After data edition, the factors affecting on survival including milk production, interaction of cycle and lactation stage, time-dependent factors of the herd, year and season of calving, age at the first calving, and reproduction effects were fitted in model and were computed their cull risks with survival kit software. Direct heritability for survival trait in the population of dairy cows of IRAN was 0.15, indicating the appropriate genetic variation for breeding programs on survival. Heritability of milk, fat and protein production, age at the first calving, and calving interval were estimated 0.26, 0.18, 0.17, 0.16, and 0.045, respectively. The effects of herd size, lactation stage, milk production, interaction of cycle and lactation stage, Holstein gene percent, and age at the first calving were significant on longevity ( $P < 0.0001$ ). The cull risk was decreased with increasing herd variation at next year but increased with increasing Holstein gene percent. The longevity decreased significantly with increasing age at the first calving. The cull risk was decreased with increasing of production cycle and the animals in the first lactation were suffered from higher cull risk than other cows. The results showed that breeding programs with estimated breeding values for milk, fat and protein production displayed an overall constant trend at cull risk in highly genetic potential for production.

**Key words:** Longevity, Animal Breeding, Dairy Cow



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# **Effect of breeding strategies on functional longevity of Holstein in Iran**

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