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Effect of the first lactation age on longevity of Holstein cattle

Zakizadeh, S [1]. Asadi, I. . Hasheminejad High Education Center, Animal Science Department, Kalantari Highway, 91769-94767, Mashhad, Iran; [1]sonia_zaki@yahoo.com

Introduction

- ✓ Reproductive performance has also been found to deteriorate as milk yield increased
- ✓ Reduction in reproductive performance affect culling rates, herd life, reduce the genetic gain from primary traits
- ✓ Fertility, which is often measured by age at first calving, open days, calving interval, or number of services, is an important measure of reproductive performance
- ✓ Conformation traits have also associated with herd life
- ✓ Udder traits had largest absolute genetic correlations with herd-life traits, followed by body traits and feet and leg traits

Materials and methods

- ✓ 1493 true herd life records from 5 herds in Yazd province in Iran during 1992- 2004
- ✓ Average longevity was about 64 months
- ✓ True life measured as age (mo) between birth and culling date
- ✓ Linear regression model included herd-year-season of the first lactation, parity, age at first lactation, as fixed effects.
- ✓ Weaning age was 57.38 d±10.77 averagely
- ✓ Environmental factors analyzed by JMP software (V. 4.0.4)

Results

- ✓ All environmental factors were significant, except the season of first lactation (Table 1)
- ✓ Longevity decreased during 13 years.
- ✓ Longevity showed a positive linear relation with parity
- ✓ The effect of herd and year could be due to different managements of rearing and/or availability of feeding stuffs in farms
- ✓ Culling rates were 22.2 for the first lactation to 11.2 for the sixth lactation.
- ✓ The highest culling rates related to the first and second lactation
- ✓ Age at the first of lactation had also significant effect on longevity

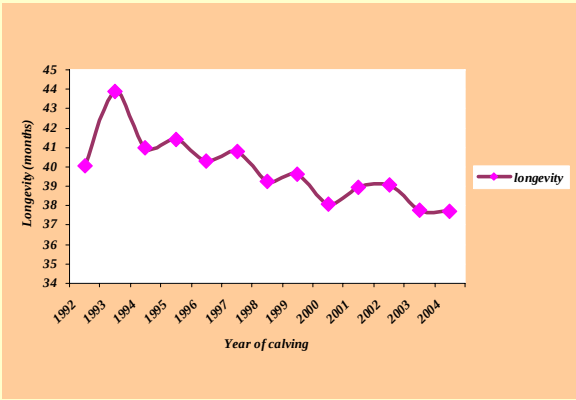
Table 1. ANOVA of factors affecting on longevity

S.O.V*	df	SS	F-value	P-value
Herd	4	2670.38	10.73	<0.0001
Year	12	2157.48	2.89	0.0006
Season	3	425.98	2.28	0.0773
Parity	5	560554.08	1802.44	<0.0001
AFC	1	14402.49	231.554	<0.0001

Objective

- ✓ The objective of this study was to investigate the effect of first lactation age on longevity in Yazd province of Iran

Fig 1- Longevity trend during 1992-2004



Conclusion

- ✓ Despite of positive linear relation between increasing of AFC and higher longevity, calving interval (CI) is a high economic criteria and reduction in CI could be described as one of the outcomes of improved fertility
- ✓ CI is open to management bias (e.g., decisions to extend the lactation length of individual high-yielding cows within herds)
- ✓ It is suggested that selection on some type characteristics in first parity cows may help to improve length of productive life or to decrease involuntary culling
- ✓ Indeed, management practices seem to keep mortality rates of high producing cows lower even though those cows have lower genetic potential for survival than do the low producers.

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