

**Table S1.** Distribution of major culling causes (%)

Reason for culling	Cows (n)	Cows (%)
Reproduction problems	3 469	25.2
Metabolic disorders	2 701	19.6
Low milk yield	2 138	15.5
Udder problems	2 012	14.6
Others	1 894	13.8
Foot or leg problems	1 430	10.4
Unknown	123	0.7
Total	12 767	100

Table 1. presents the most important culling reasons. Reproduction problems (25.2%) were the major culling cause, followed by metabolic disorders (19.6%), low milk yield (15.5%), udder problems (14.6%), others (13.8%), foot or leg problems (10.4%) and finally unknown problems (0.7%). The ranking of reproduction problems was in agreement with [1], [2] and [3], as they reported the most important cause of culling was the poor fertility for the Holstein-Friesian dairy cows. Frequency of udder problems in our study was in align with [2] and was smaller compared to [3] findings. According to [4], the frequent culling causes were diseases (38.7%), reproduction problems (36.0%), udder disorders (7.7%), lameness (3.7%) and death (12.7%) for Holstein dairy cows.

## References

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