Survival of crossbreds versus pure Holsteins from calving to first observation for milk recording and during the first 305 days of first lactation

Brad Heins and Les Hansen
University of Minnesota

Survival from calving to first observation of milk recording was compared for crossbreds versus pure Holsteins that calved for the 1st time in 6 California dairies. Cows calved for the 1st time from June 2002 to January 2005, and these cows continue to be also gauged for production, fertility, and other traits. A 7th dairy in the broader study of California dairies participated in the whole-herd buy-out program (although heifers were retained to continue dairying); therefore, cows from that dairy were removed from the analyses of survival.

The percentage of 416 pure Holstein and 1075 crossbred cows that died or were culled in the 6 dairies during first lactation are in the table that follows. Death rate, culling rate, and total removal rates reflect the actual percentage of cows that left the 6 dairies prior to first observation for milk recording and up to the 305th day of lactation. The difference of crossbreds and pure Holsteins was statistically significant in all cases.

Percentage of cows that were removed prior to first observation for milk recording and during the first 305 days of first lactation.

		Prior to first milk recording			Calving to 305th day		
Breed	Number of cows	Died	Culled	Total removed	Died	Culled	Total removed
		---------- (%) ----------			---------- (%) ----------		
Pure Holstein	416	3.6	5.0	8.7	5.3	10.6	15.9
All Crossbreds	1075	0.9	1.7	2.6	1.7	5.7	7.4
Normande/Holstein	251	0.8	2.8	3.6	1.2	8.4	9.6
Montbeliarde/Holstein	503	1.0	1.4	2.4	2.0	5.0	7.0
Scandinavian Red/Holstein	321	0.9	1.2	2.2	1.6	4.7	6.2

Death

Only 10 of 1075 crossbred cows (0.9%) died prior to first observation for milk recording, however, 15 of 416 pure Holsteins (3.6%) died prior to first observation for milk recording. Furthermore, 18 of 1075 crossbred cows (1.7%) compared to 22 of 416 pure Holstein cows (5.3%) died during the first 305 days of first lactation.

Total removals

More crossbreds remained in these dairies than pure Holsteins, with only 2.6% of crossbreds removed (died or culled) before first observation for milk recording compared to 8.7% of pure Holsteins. In other words, pure Holsteins were 3 times more likely than crossbreds to die or be

culled in these dairies before the first observation for milk recording. Also, only 7.4% of the crossbred cows versus 15.9% of the pure Holsteins in these dairies were removed by the 305th day of first lactation.

Interpretation for the industry

With replacement heifers valued at more than $2,000 in the U.S. in recent years, the 6.1% difference (8.7% pure Holsteins minus 2.6% crossbreds) in first-calf heifers lost after calving but prior to first observation for milk recording has huge financial implications for profitability of dairying.

Cows lacking a production record are often excluded from genetic evaluation in the U.S. for productive life (PL). Consequently, cows that die or are culled before the first observation for milk recording are also often excluded in those genetic evaluations. Therefore, the transmitting ability (PTA) for a bull for PL might be under-estimated or over-estimated based on daughters that did or didn't survive to first observation for milk recording. Perhaps, editing of data for genetic evaluation for PL and Net Merit (NM$) should be altered to include cows that do not survive to first observation for milk recording to more accurately reflect the true survival of daughters.

Under-reporting of death rates by USDA

Additionally, death rates of cows during first lactation would be higher than is often reported, especially by AIPL of USDA, if all cows that died prior to first observation for milk recording were included in data files. Accurate and complete data is essential to provide dairy producers with information that fully represents the dairy cattle population.