AIPL Submitted Abstract
European Association for Animal Production
61st Annual Meeting

Recent trends in mastitis and fertility indicators in the United States and reasons for change

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Milk quality and reproductive performance of US dairy cattle have changed in recent years compared to expectations from earlier trends. Although comprehensive data for milk quality are difficult to obtain for most of the US dairy industry, somatic cell counts show that milk quality is improving at an extremely favorable rate. Mean somatic cell count for herds enrolled in Dairy Herd Improvement testing declined from 322,000 to 233,000 cells/ml between 2001 and 2009. Increased herd size accounted for part of the improvement because milk quality historically has been better in larger herds. Only a small fraction of the improved milk quality is the result of genetics. For US cows bred in 2006, Holstein means for fertility indicators were 26.9 months for age at first calving, 86 days to first service (**DFS**), 31% for first-service conception rate (**CR**), 30% for all-service CR, 47% for first-service nonreturn rate at 70 days (**NR70**), 44% for all-service NR70, 2.5 services per lactation, 38.2 days between consecutive services, and 422 days for calving interval (**CI**). Jersey means were 25.6 months for age at first calving, 84 days for DFS, 39% for first-service CR, 35% for all-service CR, 53% for NR70, 48% for all-service NR70, 2.3 services per lactation, 35.5 days between consecutive services, and 410 days for CI. Use of timed artificial insemination after synchronized estrus likely has reduced DFS, CR, and CI and increased services per lactation. Use of sexed semen, which became commercially available in the United States in 2005, increased to 18% for heifer services and 0.4% for cow services by 2008. Although 90% of calves from sexed semen had the desired sex, CR was only 70% as high as with conventional semen for heifers and 83% as high for cows. Since 2002, phenotypic performance for CR and CI and genetic merit for mastitis resistance and fertility have stopped their historical declines and begun to improve.