

## **Abstract by Carel Muller - Using farmers' records to determine genetic parameters for fertility traits for South African Holstein cows**

In South Africa little attention has been given towards the improvement of fertility in dairy cows. Cows not becoming pregnant are culled because of infertility. This could be due to environmental effects (management) or a change in the genetic make-up of cows. At present, routine analyses for fertility traits for Holstein and Jersey cows are based on calving interval (CI). A study has been conducted to determine the possibility of using farmers' AI records to determine the fertility of dairy cows. Farmers routinely collect insemination (AI) dates and results from pregnancy diagnosis tests for herd management purposes. All artificial insemination (AI) records ( $n = 69\ 181$ ) in 24 646 lactations of 9 046 cows calving down in 14 South African Holstein herds were used to determine alternative fertility traits. Traits included the interval from calving to first service (CFS), the interval from calving to conception (DO), services per conception (SPC) and whether first service was within 80 days after calving (FS80d), whether cows became pregnant within 100 (PD100d) or 200 days (PD200d) after calving. Traits were significantly affected by herd, calving year, calving season and lactation number. Heritability ( $h^2$ ) estimates for these traits varied between 0.04 and 0.08 but were in agreement with results from the literature. The genetic correlations between CFS and DO and CFS and PD100d were positive, 0.56 and 0.64 respectively. Selection for dairy cow fertility, despite being lowly heritable, would be aided by high levels of phenotypic variation. A fertility index could be derived from a combination of these traits.