

# **Phenotypic and genetic parameters of reproductive traits for Ayrshire cattle on large-scale farms in Kenya.**

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## **Abstract**

Data consisting of 2757 records from ten Kenyan Ayrshire herds made between 1980 and 2005 were used to examine environmental factors affecting age at first calving (AFC) and calving intervals (CI) and consequently estimate genetic and phenotypic parameters and trends. The overall means and standard errors for AFC and CI were  $39.4 \pm 7.2$  months and  $487.5 \pm 151.6$  days respectively. The respective heritability estimates were  $0.091 \pm 0.05$  and  $0.044 \pm 0.032$ , while the repeatability estimate for CI was  $0.096 \pm 0.001$ . The genetic trends for CI and AFC were  $-0.6\text{d/yr}$  and  $-0.01\text{mo/yr}$  respectively and were both significant ( $P < 0.001$ ), indicating a decrease in mean breeding value over the study period. Phenotypic trends were  $-0.31\text{ mo/yr}$  and  $-0.35\text{ d/yr}$  for AFC and CI respectively though non-significant ( $P > 0.05$ ). The low heritability for CI and AFC indicated that temporary environmental influences were much greater than genetic influences or permanent environmental influences on these traits.