Herd fertility is evaluated by the percentage of pregnant females over a period of time after exposure to bulls. Low milk production, long calving intervals, and low percent conception among all breeds of cattle call for identification of reproductive deficiencies. Progesterone is responsible for regulation of oestrus cycles by its negative feed back mechanism and maintains pregnancy among in-calf cows. Normally it is 0 nmol/L, at oestrus, 4.5±0.3 nmol/L 10 days after oestrus and 0 nmol/L at 21 days after oestrus for non-in-calf cyclic cows. The current study was designed to determine the relationships between milk progesterone levels and reproductive status of Friesian dairy cows. Correlation between milk progesterone levels and conception/non-conception, embryo loss and other reproductive deficiencies were determined. The study enrolled 50 milking Friesian dairy cows randomly selected in two farms: KARI-Lanet and Delamere, Manera farms in Nakuru district, Kenya. The cows were divided into three treatments as follows: Test group comprised 30 open cows fifteen at each farm, negative control group comprised 5 open cows at each farm and positive control group cows comprised 5 in-calf cows at each farm. All the cows were tested for milk progesterone levels 2 days before synchronization. Test and negative control cows were synchronized for heat using prostaglandin F2α (PGF2α) at 2mls/cow. Sixty three percent of the synchronized cows exhibited heat within an average of 2.6 days and were inseminated using semen from one bull. Milk samples were collected from each cow every day for 62 days and assayed for progesterone levels using radioimmunoassay technique. The data collected was analyzed using Statistical Analyzing System version 8.2 and the means were separated using student Newman Keul test. There was high correlation between progesterone levels and reproductive deficiencies with differences between in-calf and non in-calf cows (r= 0.8, P<0.05). Progesterone levels ten days after artificial insemination significantly differed (P<0.05) among treated cows and controls; the levels indicated cyclicity or non-cyclicity. Cyclic cows had an average progesterone levels of 3.5 nmol/L while non-cyclic cows had average progesterone levels of 0 nmol/L. Milk progesterone levels among cows 21 days after insemination varied significantly (P<0.05). The levels were 8.2±0.6 nmol/L, 0.6±0.2 nmol/L, and 0.6±0.2 nmol/L for in calf, non-in calf cyclic cows and silent heat cows respectively. Cows with embryo loss and cystic ovary had mean progesterone levels of 0.2 nmol/L and 4.2±0.9 nmol/L respectively. There was no significant difference (P>0.05) in progesterone levels for non-cyclic cows and cows with cystic ovary. Reproductive deficiencies detected included silent heat (24%), cystic ovary (8%), and non-cyclicity (15%), heat while in calf (16%), non-conception (20%) and embryo loss (17%). There was significant interaction (r=0.86, P<0.05) between age, body condition score, and reproductive deficiencies with higher conception rates (P<0.05) in cows below 7 years of age of body condition score 3. The results of this study suggest that in order to improve herd reproductive efficiency, cows above 7 years should be culled. Milk progesterone levels proved useful in detection of reproductive deficiencies; however the method is effective only 10 days after insemination for cyclicity/non-cyclicity and 21 days for conception/non-conception and other reproductive deficiencies.