2-1 Dairy cattle breeding definitions

Oestrus
The period during which a cow will stand to be ridden by her herd mates or a bull. It occurs every 18-24 days in non pregnant cows. It usually lasts 14-15 hours, but can vary from 2-30 hours. Cows in oestrus are often referred to as “bulling” cows or cows “in heat”.

Post Partum Anoestrous Interval (PPAI)
The number of days from calving to first detected oestrus. The average PPAI in mature cows is about 40 days. It is longer in 2 and 3 year old cows (about 7 days) and thinner cows (5 days shorter per extra condition score). Cows fed well after calving have shorter PPAI’s. PPAI is 7 days longer in Friesians than Jerseys.

Ovulation
The release of the egg or ovum from the ovary into the fallopian tube. (Ovulation occurs about 8-12 hours after the end of oestrus).

Submission Rate (SR)
The percentage of cows identified on heat and mated or inseminated at least once during a defined period, usually the first 3 or 4 weeks of the breeding programme. Accurate and thorough heat detection is essential for achieving high SR’s. SR’s of 90% plus are achieved in the first 3 weeks of the breeding programme in well managed herds.

Non Return Rate (NRR)
An estimate of the percentage of cows which have become pregnant after insemination. In New Zealand it is defined as the percentage of cows which do not return to service within 49 days of first insemination.

This estimate will be much greater than the actual pregnancy rate if complete records of return to service dates are not kept. The average pregnancy rate to first insemination based on pregnancy testing six weeks after that insemination is 60% to 65%.

Silent oestrus (Silent heat)
Occurs when a cow ovulates without bulling or coming on heat. This is most likely to occur if a cow is being suckled, at the first ovulation after calving (or any ovulation within 40 days of calving), or if there are no other “bulling” cows in the herd. It is more common in older cows.

Short cycling
Occurs when a cow comes on heat at shorter than the usual 18-24 day interval. The first heat after calving may be followed by a short cycle with only 8-12 days before the next heat. This is more common in younger cows. Short cycles can also be caused by abnormal growths (cysts) on the ovary but this is very uncommon. Cows that have continued short cycles need to be treated by the vet.