MALAYSIAN FARM MANAGEMENT NOTE 2

John Moran, Profitable Dairy Systems, Kyabram, Vic, Australia, Oct 2012

REPRODUCTIVE MANAGEMENT

Improved reproductive performance provides many benefits to farmers such as:

- Higher average milk yields each day. Cows with poor reproductive performance will spend more of their time in late lactation, when daily milk yields are lower.
- Fewer cows that have become excessively fat because they have failed to conceive.
- Less compulsory culling of cows failing to become pregnant.
- Fewer cows with long dry periods.
- Reduced insemination and semen costs.
- Heifers calving at a younger age.
- Increased number of calves produced each year, thus providing more animals for sale or as replacements for the milking herd.
- More efficient feed utilisation as a result of the above benefits.
- More profits, less work and less worry.

Heat detection

Observations of oestrus are more difficult in the tropics due to anoestrus resulting from poor nutrition and/or intensive suckling. Furthermore, the oestrus period is shorter (10 to 12 hr), signs are less pronounced or mainly shown at night (in buffaloes or local cattle) when farmers are less keen on, or active in, heat detection.

For practical purposes, most small holders use AI rather than natural mating. This introduces another set of factors limiting herd fertility. Cows tied up in a stall can hardly express the most easily recognisable signs of oestrus like mounting and being mounted.

Cows show signs of heat when:

- They are 18 to 24 d after their last heat (if they are still non pregnant).
- They stand to be mounted.
- They attempt to mount other cows.
- They are restless and bellow.
- Their feed intake is reduced
- They have poor milk let down.
- Stringy mucus is seen exuding from their vulva.
- Their vulva is red and swelling.

The average duration of heat is about 14 hr in normal weather conditions. Heats can be as short as 2 hr and as long as 28 hr. Twice daily observations are then essential to catch short heats. Observations in the cool of early morning are more likely to detect heat than those in the heat of the day.

The best conception rates occur following insemination 4 to 12 hr after the first signs of heat are observed. However the problem is knowing at what stage of oestrus the particular heat was first detected.

Heat detection can be improved with:

- Routine night observations.
- Interpreting cow behaviour.
- Checking records for days since previous heat (for closer observation).

- Using heat detection aids in larger herds, although tail paint is a cheap effective aid for most farmers.
- Using oestrus synchronisation as a management aid.

Each month farmers need to identify cows which have calved more than 80 days before, but have not been detected on heat, and examine them. This is important if more than 60% of the herd are in this category. Some of these cows may have had an undetected heat, whereas others may not have been on heat and can be treated as non-cycling cows. If most of these cows are in low body condition, their feeding management should be improved. Others may be suffering disorders such as cystic ovaries, infected uterus, and lameness, thus requiring veterinary attention.

Other important factors should be taken into account, such as:
- Body condition, too fat or too thin.
- Rapid loss in body condition.
- Small heifer size.
- Diagnosed health problems, such as cystic ovaries, uterine infections, lameness.
- Heat stress, as apparent from observed high respiration rates and/or high Temperature Humidity Index

Achieving 100% success with AI

It is just not possible to achieve 100% of all cows getting back in calf no matter how many AI cycles a farmer undertakes. It is possible for a healthy, high yielding cow may require up to eight inseminations to conceive. The difficulty for the farmer is deciding when enough is enough and that cow should be culled.

Heat detection and insemination

Voluntary waiting periods should be no more than 50 d, after which cows should be inseminated when observed to on heat. Although CR can be low (33% when 40 d post-calving, 45% when 60 d post-calving) cows can only conceive when inseminated. A voluntary waiting period of 80 to 90 d appears to be more the norm in most Asian countries.

There are two types of error in heat detection, missing a cow when on heat or inseminating a cow when not on heat. With the first error, SR are low while with the second error CR are low. Small holder farmers (who depend on AI technicians to do the insemination) have an additional problem in that the technician must first agree that they also consider the cow to be on heat, before she gets inseminated.

Health and reproductive performance

There are many health management problems that can adversely affect fertility, such as:
- Management of twin calves
- Assisted calving
- Retained Foetal Membranes (RFM's)
- Uterine infections and vaginal discharges
- Lameness
- Ketosis
- Displaced abomasum
- Cystic ovaries
- Abortions

Some health problems affect the reproductive tract directly (such as RFM's and vaginal discharges) while others reduce feed intake leading to rapid body condition loss and anoestrus (such as lameness and ketosis). It is important to keep good records and have a planned approach for treatment and prevention.

Cows with problems at calving have an increased risk of infection of the reproductive tract. Such infections can last for weeks (even months) after calving and can even show normal heats and no abnormal discharge, yet these cows can have reduced fertility. They may cure themselves over time but are more likely to show repeat heat cycles. As well as immediate treatment, follow up treatments are available such as prostaglandin or antibiotics.

To improve cow health, it is important to keep accurate records and seek veterinary advice if the per cent of naturally calving cows (excluding cows induced to calve early) with this problem exceed the number shown in brackets below:

- Any cow having twins (no practical strategies prevent twin calves).
- Any assistance required to deliver a calf (seek advice if >6%).
- Any calf born dead or died within 24 h of birth (seek advice if >1%).
- RFM's, that is membranes visible externally on the day of calving (seek advice if >4%).
- Vaginal discharge or pus discharging from the vulva more than 14 d after calving (seek advice if >6%).
- Lameness, or cows not bearing full weight on at least one leg which affects walking (seek advice if >3% of first calvers or >2% of older cows).
- Abortions (seek advice if >5%).
- Other health problems, including ketosis, displaced abomasum or cystic ovaries (seek advice if >5%).

Some infections that cause abortions in cattle can also infect humans, so only handle aborted foetuses and membranes with disposable gloves and avoid contact with vaginal discharges from aborted cows. Bury the foetus and membranes ensuring that dogs are not allowed access to them.

Putting it all together – a plan for success

Reproduction is a complex issue and solutions to problems don't come in a single package, as many actions may be required to achieve targets. To ensure success, these actions need to be part of the overall farm management. It is easy to lose track of the length of time between when cows calve and when they should be first mated and how many times they have been mated this lactation.

Setting priorities to address fertility issues

- Put first things first, or what are the most important management required to achieve good reproductive performance?
- Small steps make can big gains.
- Attention to detail can make the difference.
- Solutions are often not expensive or time consuming.
- Keep accurate records, particularly of all inseminations.
- Have a plan for each stage of the cow's life cycle, because success requires a fertility life plan.
- Deal with the most important things first because some things are more important than others.
- Work on the things you can control before worrying about those you cannot control.
- Consider culling cows that have had many inseminations and now producing little milk.
- Monitor performance carefully and set realistic targets (Table 8.1).

Some important decisions to make

- Select a suitable voluntary waiting period, ensuring it is short if milk yields decline rapidly in the herd or heat detection is poor.
- Assess the need to cull more severely by calculating the percentage of cows that have more than 16 months between calvings. If this is more than 15% of the herd, then some of the low fertile

cows need to be culled. Make a conscious decision on how long to continue mating any cow that is difficult to get in calf. This will depend on:

1. her current milk production,
2. her age,
3. her previous milking record,
4. if she has clinical mastitis,
5. if she has previously been had difficulty get back in calf,
6. of most importance, the cost of keeping her compared to selling her and buying a replacement.

Heat detection must be optimised to limit missed heats, using both improved observation and greater use of heat records. In addition, feeding management must be addressed to ensure:

1. body condition scores are adequate at calving,
2. losses in body condition are minimised during early lactation,
3. target live weights are achieved for growing heifers.

The biggest factors affecting reproductive performance of individual cows are:

1. Problems at calving, such as abnormal calvings (assisted or twin calving) or health problems (retained foetal membranes, vaginal discharges or lameness).
2. Cows having poor fertility in their previous lactation.
3. Age extremes, in that very young (2 and 3 year old) or old (7 years or older) have poorer reproductive performance relative to middle aged cows.
4. Generally speaking, a cow with a reproductive problem in one year is more likely to have a problem the following year.

One simplistic answer for a solution to any problem cow could easily be “Not enough inseminations” but when is enough enough?