



Artificial Insemination: Have you ever considered AI in your suckler herd?

Hugh Thomson and Alex Walters, Westpoint Veterinary Group

Artificial insemination (AI) cattle was first conducted in 1900 by a Russian scientist E Ivanoff. The technique quickly grew and with the advent of storing semen in liquid nitrogen in the 1950's, the technique was widely adopted by the dairy industry. Nowadays the AI is practice on most dairy farms in the UK. Pedigree beef breeders have also relied heavily on AI as a means of improving genetics but now there is place for artificial insemination on both pedigree and commercial suckler units.

The obvious benefits of artificial insemination are:

- Potential to use bulls with higher EBV (estimated breeding values) and thus improve genetic merit
- Help to shorten calving period (if done as part of a synchronisation programme)
- Reduces the number of stock bulls required
- Reduces the risk of venereal diseases
- Calving has a relatively fixed pattern

However, there are some major points to consider before you are to embark on any form of AI. Without synchronisation, then heat detection becomes vital. This involves a regular heat detection regime by the farmer which should consist of at least two 20-30 minute sessions daily. Beef farmers may not be confident with all the signs of expression of heat, especially if expression of heat is subtle and potentially short during hot summer months. The author's experience of suckler clients in the UK would be that time is precious during summer months, and devoting time to heat detection would be difficult as well as challenging with stock likely to be at grass. This may be a more viable option for autumn calvers where cows are in closer proximity if housed. However, in general, synchronisation is the only viable option if any number of cows/ heifers are to be artificially inseminated. This allows AI with minimal heat detection, often serving cows at fixed time intervals. Key logistical points of a synchronisation programme:

- Good handling facilities are essential (see Fig 1.)
- Cows are likely to have calves at foot which makes handling more awkward
- Cows/ heifers need to be relatively close at hand as some programmes will involved handling stock 4-5 times within 10-12 days
- Cows/ heifers should be cyclical and be at least 6 weeks post-calving
- Cows should be on a good rising plane of nutrition and in the correct body condition score (BCS), ideally 2.5-3. Radical changes in BCS post calving may also be detrimental i.e. from BCS 4-BCS 2



Fig 1. A Good handling system is essential

- No underlying infectious disease process (BVD, IBR, Leptospirosis, Neospora) or trace-element deficiencies
- If you are only artificially inseminating once, then bull power will be important for cows that return to service particularly in larger herds (e.g. 30-50 cows returning over 3-4 days).
- Be realistic about the conception rates you are likely to achieve. 50-55% is realistic with cows and 55-65% for heifers. However, in well managed systems conception rates can be as high as 70-80%. Remember a fertile bull is only likely to get a conception rate of 60-70%. A good rule of thumb would be that synchronisation lowers conception rate by about 10%.
- If inseminating heifers for the first time, a manual veterinary inspection of the reproductive tract may be beneficial before administering any treatments to help detect abnormalities with the reproductive organs that may interfere with successful breeding, especially if you intend to use expensive semen
- Organise the semen for the AI in advance and ensure the timing of your programme is convenient for the inseminator

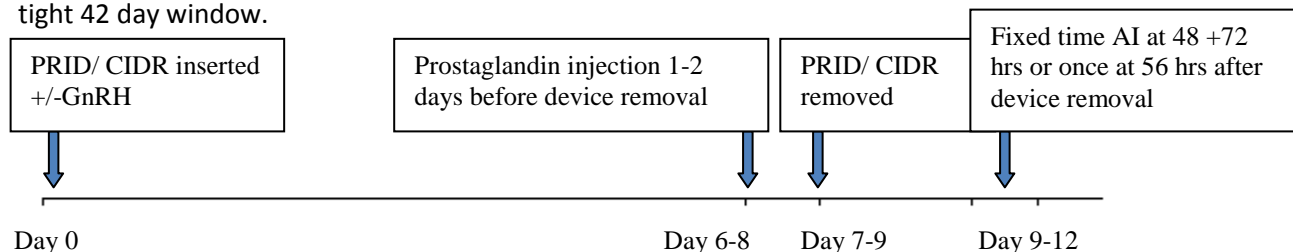


Fig 2. A well organised approach is required in larger synchronisation programmes

There are a number of methods of synchronisation available. In the UK, the two most common ways of synchronisation rely upon progesterone devices (PRID™/ CIDR™) and prostaglandin injections.

1. Progesterone releasing intravaginal devices (PRID™/ CIDR™)

Device inserted vaginally and left in place for 7-9 days. Prostaglandin injection is then given 1-2 days before device is removed. Fixed time AI can then be done at 48 and 72 hours after device removal or once at 56 hours. The Administration of GnRH (Receptal™/ Ovarelin™) at device insertion can help to increase conception rates marginally in cows. This programme means handling stock five times if serving twice. In addition, this is accepted as the more expensive means of synchronisation but found to have improved and more reliable conception rates, in cows especially. It may also be beneficial to shorten the “tails” of these devices, especially in heifers, to prevent them pulling them out in curiosity! This system can be used as part of a “double” or “triple” synchronisation programme without the prostaglandin injections so that all cows/heifers are served 2-3 times over a tight 42 day window.

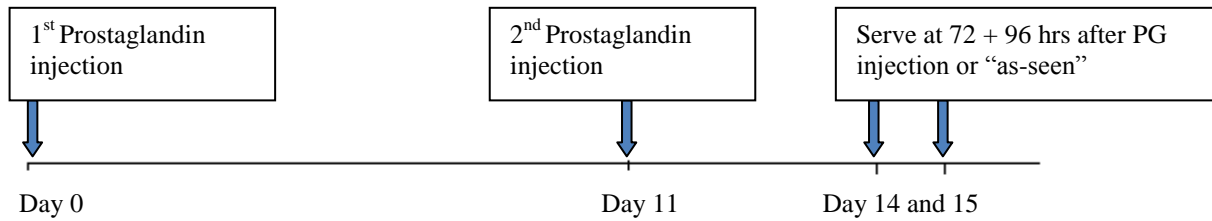


2. Double prostaglandin injections (Estrumate™/ Lutalyse™)

Cows/ Heifers are injected twice with prostaglandin 11 (10-12) days apart with the potential to fixed time AI at 72 and 96 hours after injection or can be served “as seen” in heat. This strategy remains a good approach in heifers



but has poorer results with cows. Generally, this programme is recognised as a cheaper approach to synchronisation and involves less animal handling. However, timing of heat is not as reliable as with progesterone devices and conception rates can be disappointing.



Although it may seem a lot of effort to carry out such programmes, there are some significant benefits that should not be overlooked. Serving all of your breeding animals on the first day of the planned breeding period ensures that you maximise calf weights at weaning, allows good labour management at calving and helps to maintain a tight calving pattern. In addition, the artificial insemination can expand and improve herd genetics as well as avoiding spending large sums of money on expensive stock bulls.

Within Westpoint Veterinary Group our suckler cow synchronisation varies from 1-2 "house" cows to entire commercial suckler herds of 300 cows. It should not be assumed that this is simply a breeding tool for top-end pedigree breeders; there are significant benefits to other suckler herds in exploring synchronisation and artificial insemination.