

Synchronisation protocols for the beef herd.

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What is synchronisation?

Synchronisation is the use of veterinary prescribed drugs to manipulate the female reproductive cycle to enable ovulation to occur at a known set time period. Up to 65% conception rate can be achieved with good management and following protocols correctly. There are several synchronisation protocols, all of which utilize artificial insemination and some which allow for natural service.

Benefits of synchronisation beef cattle

1. AI is often overlooked in beef systems due to issues associated with heat detection and daily handling of animals over a prolonged period. Synchronisation overcomes this by limiting the handling to a short period of time.

2. AI allows access to high genetic merit bulls with Estimated Breeding Value (EBV) data allowing selection of bulls with traits for producing heifer replacements, reducing dystocia rates and producing quality calves for beef production. Additional benefits of not entirely relying on bull power include less inbreeding- easier to retain homebred heifers; risk of sudden bull failure and the safety aspects of being able to keep less bulls.

3. Ensuring eligible females are served on day 1 of the breeding period increases the amount of cattle calving in the first 21 days of the season. Females calving early have more time to recover prior to re-breeding.



Calving earlier in the block gives the cows more time to recover prior to re-breeding.

4. Beef cows often have a delayed return to cyclicity due to the suckling calf, the CIDR-sync protocol can overcome this to allow for a fertile ovulation in appropriately conditioned cows.

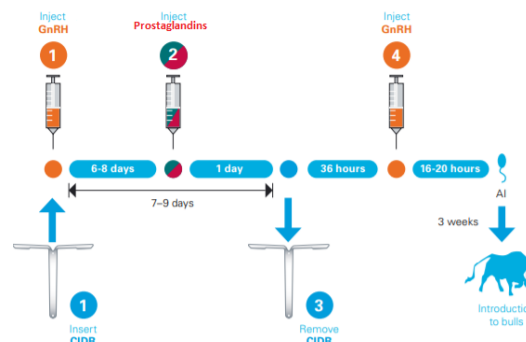
5. More services early in the breeding period will likely decrease the calving interval and allow for a shorter calving period. This will enable a more uniform calf crop at weaning and make managing age groups easier.

6. Multiple synchronisation protocols available, varying in cost and the type of insemination possible (fixed time AI vs heat observed service vs natural).

Protocols:

A. Cidr-Sync: for cycling and non-cycling animals

This is the most demanding of the protocols but allows for fixed time insemination. Can be used on cycling and non-cycling animals.



CIDR-sync protocol:

Image adapted from: <https://www.zoetis.co.uk/livestock-farming/useful-resources/pdfs-and-images/branding-protocols-for-beef-cows.pdf>

Time	Action
Day 0 (AM)	Insert Cidr and GnRH injection
Day 7 (AM)	Prostaglandin injection
Day 8 (AM)	Remove CIDR
36 hours later (PM)	GnRH injection
16-20 hours later	Fixed time service

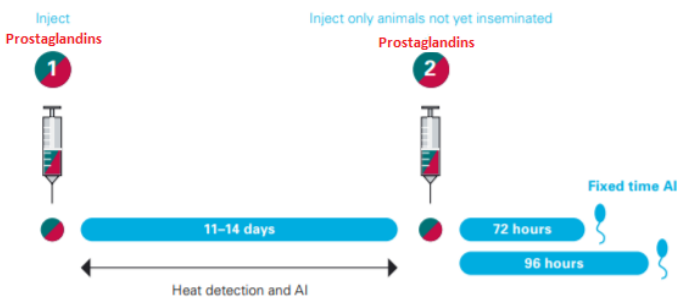
The table above sets out the CIDR-sync protocol. The AM/PM stated are not set in stone (as long as the timings are followed correctly) but do allow for the fixed-time service to occur at a sensible time of day.

B. Prostaglandin Programme

This protocol can only be used on cycling animals and for accuracy can only be used with AI. Good record keeping and animal identification are needed so that only unserved animals receive a second injection.

Protocol:

- Initial prostaglandin injection to all animals which have a corpus luteum present on their ovaries.
- Heat detection and AI for the following 11-14 days.
- After this time any unserved animal receives a 2nd prostaglandin injection.
- Fixed time AI occurs at 72 hours and 96 hours post 2nd injection.



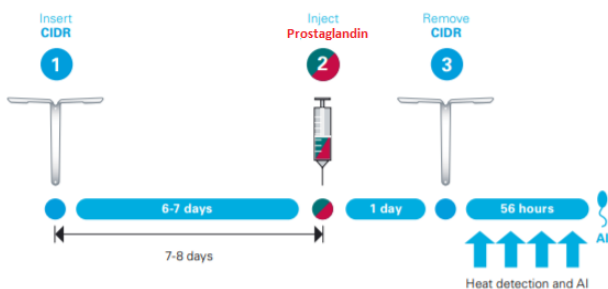
Prostaglandin programme:

Image adapted from: <https://www.zoetis.co.uk/livestock-farming/useful-resources/pdfs-and-images/breeding-protocols-for-beef-cows.pdf>

C. CIDR- programme.

This protocol can only be used in cycling animals. It makes use of heat detection and service followed by a fixed time service 56 hours after CIDR removal in any unserved animals.

Time	Action
Day 0	Insert Cidr
Day 7	Prostaglandin injection
Day 8	Remove CIDR
Heat detection and AI	
56 hours post CIDR removal	Fixed time service for any unserved animals.



CIDR programme:

Image adapted from: <https://www.zoetis.co.uk/livestock-farming/useful-resources/pdfs-and-images/breeding-protocols-for-beef-cows.pdf>

Optimising conception rates from synchronisation programmes

- Before proceeding with giving any reproductive drugs it is wise to have all eligible females scanned to look for any abnormalities that would impede success such as infection, cysts, freemartinism, immaturity and unknown pregnancy.
- Cattle should be a BCS of 2.5/3 with heifers being 65% of their adult weight.
- Vaccinations should be given at least one month prior to service.
- Cows should be at least 50 days calved.
- Management is crucial with consistency being key with sudden changes being highly detrimental to success.
- For successful heat detection animals need to be observed for at least 20 minutes, 3 times daily and facilities need to allow for easy catching and restraint for service. The use of heat detection aids such as estroprotect stickers, kamars and paint will be hugely beneficial but do not replace physical observation.
- **The protocol must be pre-planned and followed correctly.**



Well managed cattle with a good body condition score are likely to have better conception rates to synchronization