



JUVENILE IN VITRO EMBRYO TRANSFER

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- Each heifer is born with her lifetime amount of oocytes – more than 50 000
 - As the heifer matures most of these oocytes die off and after puberty she is left with around 5000 oocytes

The cow is cycling...

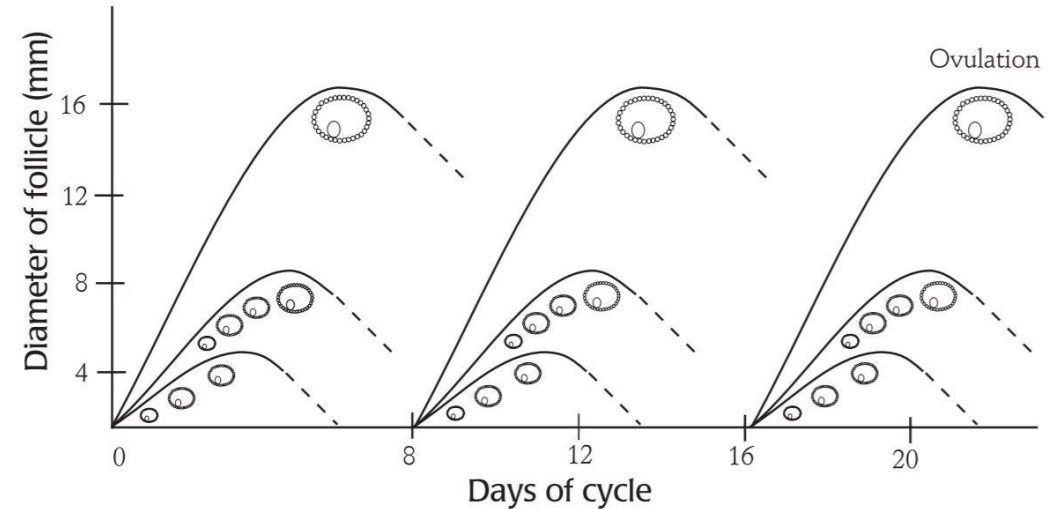


Figure 2.4: Follicular wave development in cattle

Follicles grow in 'waves' and there are usually three such waves during the 21-day cycle (see Figure 2.4). In some breeds of cattle, especially *Bos indicus* breeds, there may only be two waves but the principles are the same. Around 20 to 50 follicles begin growing in each wave and one follicle grows to a larger size and 'dominates' the other follicles, which then die off. In the third wave the large follicle (*Graafian follicle*) goes on to release the egg (*ovulate*), about 10 to 12 hours after the end of heat. The Graafian follicle secretes the hormone *oestrogen*, which is responsible for the signs of heat.

To achieve success you need good quality semen ; good quality oocytes and the right technology



IVF LAB



Results in South America



- Aspirate as early as 2 mths
- Anaesthetic , endoscopic preferred
- Average of of 20 oocytes per aspiration but can be higher with FSH stimulation
- Growth rate (to Blastocyst between 10 and 40%)
- Can repeat every 3 weeks



Requirements

- High accuracy EBV's & Genomics if you want to decrease generation interval to this extent
- Certain labs in US have done genomics on embryos
- Only transfer the highest ranking embryos
- Sexed semen can be used
- resulting in the donor animal having heifer calves on the ground at 12 months of age
- Shortest possible inter generational intervals

Thank You

