

EMBRYO PLUS

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FERTILITY and
ASSISTED
REPRODUCTIVE
TECHNIQUES



FERTILITY TESTING

- Before sale
- Before breeding
- After breeding
- Evaluation





External Reproductive Organs

- Testis

- Size

- Buffalo

- 30cm 3jr

- 34cm 4jr

- 36-48cm

- Blue wildebeest

- >24cm 2jr

- 26cm 3jr

- 28-30cm

- Sable Antelope

- More or less same as BWB



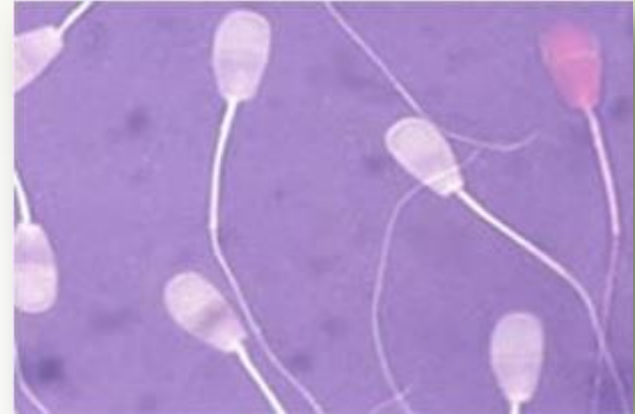
Semen motility

- Mass motility
 - 1-4 (5)
 - ~2-3
- Individual motility
 - 65-80%
- Colour
- Consistency



Semen morphology

- Normal
 - 75%?
- Major defects
 - 15%?
 - DAG
- Minor defects
 - 25%?
 - Distal Mid-piece Reflex
 - DSD





ASSISTED REPRODUCTIVE TECHNIQUES (ART)

- Artificial Insemination (AI)
- Embryo Transfers (ET)
- In Vitro Production (IVP/IVF)
- Nuclear transfer (cloning)
- Induced Pluripotent Stem cells (iPS)



ARTIFICIAL INSEMINATION

- Semen is collected from a male
- Female ovulates
- Fresh or Frozen Semen is inseminated into the female
- Fertilisation
- Normal pregnancy



ADVANTAGES

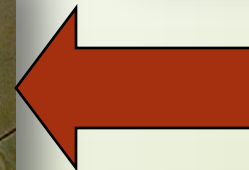
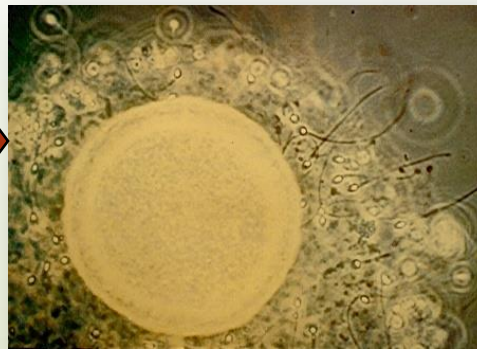
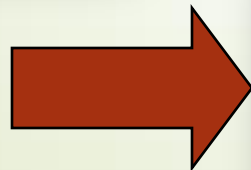
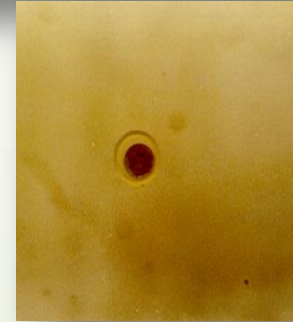
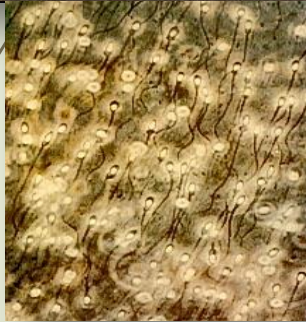
- Insurance
- Movement of semen
- Disease free / Low risk of introduction.
- Improve “better” / selected genetics.
- Increase genetic variation.
- Calves born – resistance to disease.



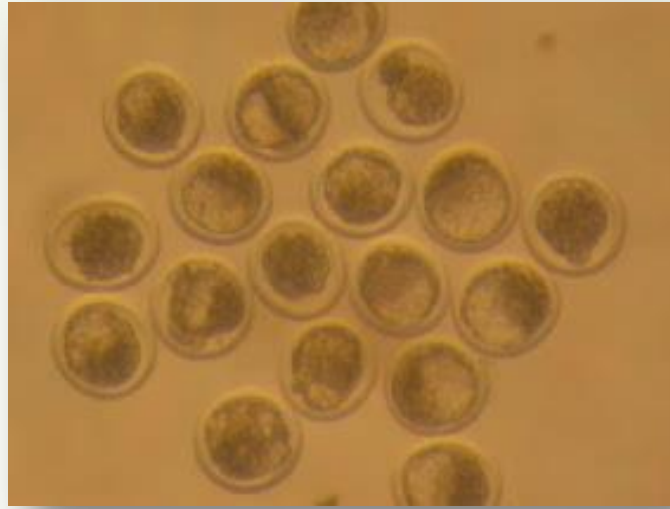
EMBRYO-TRANSFERS



WHY EMBRYO TRANSFERS ?



RESULTS OF EMBRYO TRANSFER



➤ Transfers in recipients



IN VITRO PRODUCTION (IVP)

- Test tube babies
- Normal pregnancy



LABORATORY



ADVANTAGE



- Multiplying high merit Genetics
- Saving genetics
 - Insurance
- Transport of genetics
 - Export
- Prevents disease transmission
- Immunity in calves



Disease transmission

- Minimal Risk
- Embryos can be washed
- OIE
 - International Embryo Transfer Society
 - Health and Safety Advisory Committee
 - Schedule of Diseases



NUCLEAR TRANSFER

- Twins
- Genetically different
- Saving genetics
- Moving genetics



Induced Stem cells

- Future.....
- Advantages same as Nuclear transfer





GAME

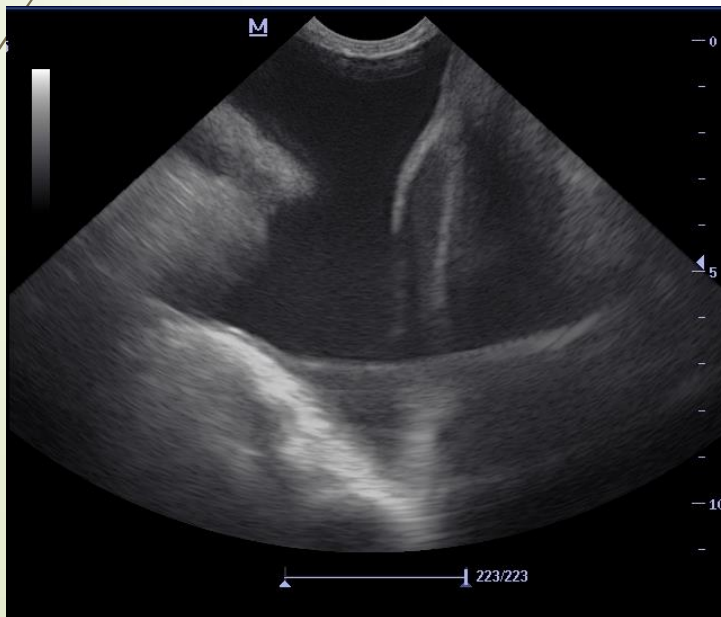
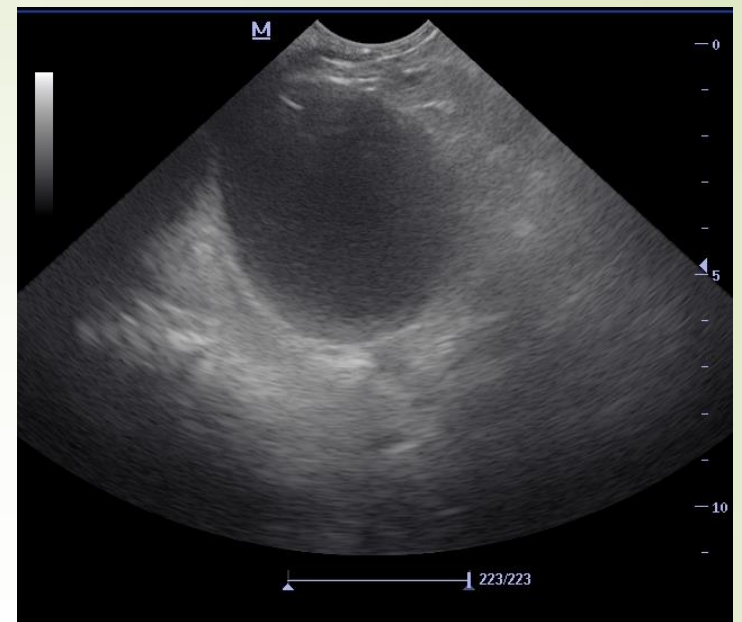


RHINO

- Northern White Rhino
- Eastern Black Rhino
- Zimbabwean Rhino
- Sumatran Rhino
- Javan Rhino
- Indian Long-horned Rhino







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REPRODUCTION

- Dead animals
- Semen
 - 12 hrs up to 24 hrs
 - Cool deg C
- Oocytes
 - 4-6 hrs up to 12 hrs





There are two ways to live your life.
One is as though nothing is a miracle.
The other is as though everything is a miracle.

Albert Einstein (1879–1955)