TOOLS FOR EARLY PREGNANCY DIAGNOSIS

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TOOLS FOR EARLY PREGNANCY DIAGNOSIS

- Economic Importance:
- Detect pregnant animals for better feeding and management.
- Early treatment of non-pregnant animals
- To reduce calving interval
- Increase milk production
- Methods used for early pregnancy diagnosis.

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- Several methods are available for a cow or heifer:
- **Non-return to oestrus**
- If oestrus signs are not observed around 3 weeks after service or insemination, the cow is generally assumed to be pregnant.
- However, even if oestrus detection is good, not all of these cows will be pregnant. On the other hand, up to 7% of pregnant cows will show some signs of oestrus during pregnancy.
- Insemination of these animals may result in embryonic or foetal death.
- More reliable methods for detecting early pregnancy in cattle are:
- Rectal palpation
- Hormone measurements
- Early Pregnancy-associated Protein
- Ultrasound examination

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- Rectal palpation
- Rectal examination is usually done between 35 and 65 days post AI.
- Hormone measurements
- **Progesterone assay**
  The progesterone secreted by a functional corpus luteum between 18 and 24 days after service or insemination is an early indication of pregnancy.
- It can be assayed in milk or plasma. Optimal assay time is 24 days after service or AI, this eliminates the possibility of long oestrus intervals which might result in false positives.

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- Hormone measurements
- **Common reasons for errors in hormone measurements**
- pyometra/persistent corpus luteum
- cystic ovarian disease (luteal cysts)
- incorrect handling of the samples and test kit

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- Early Pregnancy-associated Protein
- Recently available tests detect so called early conception factor (ECF) or pregnancy-associated glycoprotein in blood samples. They are reported to detect the pregnancy-associated glycoprotein within 48 hours of conception.
- Because of the high incidence of embryonic mortality this test should be treated solely as an indication of conception. Pregnancy should be confirmed later by rectal or ultrasound examination.

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- Ultrasound examination
- Early identification of non-pregnant cows post breeding improves reproductive efficiency and pregnancy rate in cattle by decreasing the interval between AI services and increasing AI service rate.
- Real time (B-mode) ultrasound is a reliable and relatively simple method of diagnosing pregnancy as early as day 26.
- **Accuracy**
  An accuracy of over 99% can be achieved, enabling fertility problems to be identified rapidly.

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- **Comparison of early pregnancy diagnosis techniques**

Technique	Early testing	+ve diagnosis accuracy	-ve diagnosis accuracy
Rectal palpation	+	+++	++++
Transrectal ultrasound	++	++++	++++
Milk progesterone	+++	++	+++
Early Conception Factor	++++	+	+