Pregnancy Diagnosis

"Oh, sure they're nice, but are they real?"
Indications

• Detect cows that are NOT pregnant
  – Rebreed/tx abnormalities
• Beef Cows at weaning when calves are 6-7 months
• Dairy: want 1\textsuperscript{st} calf at 24 months; subsequent intervals at 13 – 13.5 months
  - Preg check at 25-40 days post-breeding
Methods

• Management
• Palpation
• Chemical Tests
• Ultrasonography
Management

• Exposure to bull or artificial insemination
  – Pregnancy based on breeding history
  – Not reliable!
• Cessation of estrous cycle
  – Most common cause is pregnancy!
  – Must have good heat detection program

Metestrus bleeding
  – Not effective! Simply means the cow has come out of estrus
Palpation per Rectum

• Customary method for over 50 years
• Accurate as early as Day 30 and throughout gestation

• Four Positive Signs:
  – Fetal membrane slip
  – Amniotic vesicle
  – Placentomes
  – Fetus
Fetal Membrane Slip

- Chorioallantois within the lumen of the uterus
- Can be felt as early as Day 30 in pregnant horn
- Reliably detected at Day 35 in pregnant horn
- Detected at Day 70 in non-pregnant horn
Amniotic Vesicle

• Developing conceptus and amniotic fluid within the amnion
• As early as Day 28 in heifers
• Day 32-35 in pluriparous
• Spherical, turgid, fluid filled structure
• ~ 1cm at 28 days
• Becomes progressively less turgid as it grows and fetus can be palpated inside at 65 days
Amniotic Vesicle

- Heart is external until Day 42 in the bovine
- Be careful not to rupture!
Placentomes

- Palpable @ 75-80 days
- 75-120 maternal caruncles arranged in two dorsal and two ventral rows
- False Positives:
  - Placentomes remain palpable for a variable time after fetal death
  - Ovaries can feel like placentomes – but I’ll bet you can’t find more than two ovaries!
Fetus

- Palpable at Day 65
- Early: can be directly grasped
- Later: ballotment
- Fetus comes to rest on maternal abdominal floor at 5-6 months gestation
Fetus

• False-Positive
  – Dorsal sac of the rumen
  – Left kidney, tumors, enlarged lymph nodes, adhensions, connective tissue, abdominal fat

• False-Negative
  – Possible at 5-7 months gestation if fetus is out of reach and other signs are not noted on exam
Supporting Signs of Pregnancy

- Asymmetry of the uterine horns
- Resilience and fluctance of the uterine wall
- Fixation of the cervix
- Hypertrophy of the middle uterine artery
- Ovarian changes
Estimation of Stage of Gestation

• Based on characteristics of the pregnancy noted on palpation
• Most accurate during 1\textsuperscript{st} half of pregnancy
• Parameters
  – Size of A.V.
  – Size of fetus
  – Size of placentomes
  – Size of middle uterine artery
  – Fetal crown-to-nose length
Accuracy of Palpation

• When performed correctly and thoroughly, it is the most accurate method!
Chemical Tests for Pregnancy

• Progesterone
  – 75-80% accurate
  – Blood or milk test at 20-24 days post insemination

• Estrone Sulfate
  – From placenta; not useful for early detection

• Bovine Pregnancy-Specific Protein B
  – 24 days after breeding; very accurate!

• Immunosuppressive Early Pregnancy Factor
  – 87.5% accurate at less than 24 hours gestation
Ultrasonography

- Transrectal, 5 MHz transducer best
- Visualize A.V. at Day 13-14
- Can determine gender at 73-120 days
- Need a reliable and rugged machine!
Summary

• Pregnancy diagnosis is an important part of good management & helps to maximize reproductive performance
• Rectal Palpation is the most widely used method due to it’s economic benefits, accuracy and speed of diagnosis.
• Other methods have their own advantages and disadvantages.
Questions

• Why Pregnancy Check?  
  To detect cows that are not pregnant!

• What are four methods of pregnancy detection?
  Management
  Rectal Palpation
  Chemical Tests
  Ultrasonography
Questions

• What are the four positive signs of pregnancy?
  Membrane Slip, Amniotic vesicle, Placentomes, Fetus,

• What are some supporting findings on palpation?
  Assymetry of uterine horns, resilience/fluctance of uterine wall, fixation of the cervix, enlargement of middle uterine artery, ovarian changes
Questions

At what day of gestation can the following be used to diagnose pregnancy?

- Membrane Slip: Day 30 (reliably at 35)
- Amniotic Vesicle: Day 28
- Fetus: Day 65
- Cotyledons: Day 75 - 80