Pregnancy Diagnosis

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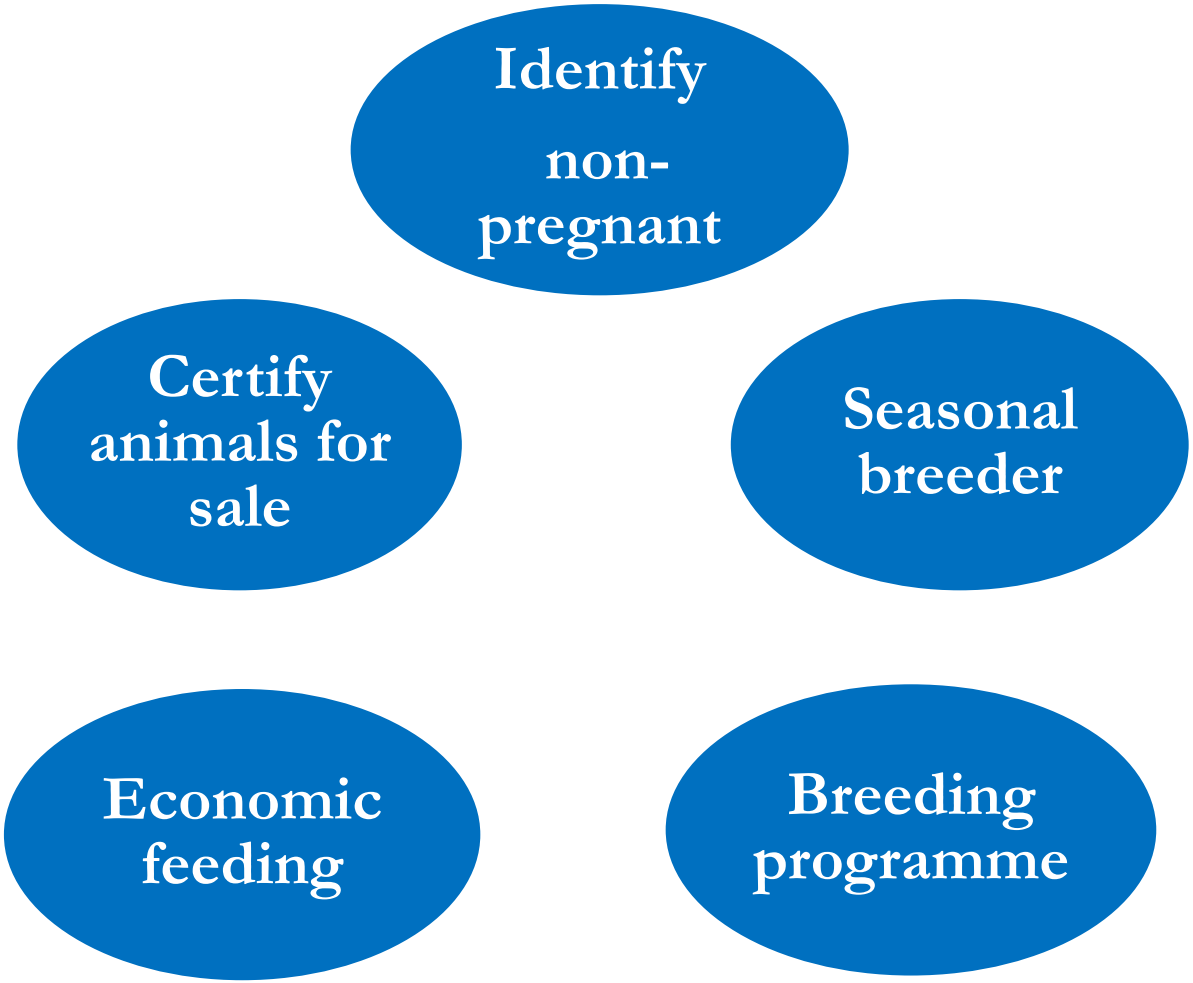
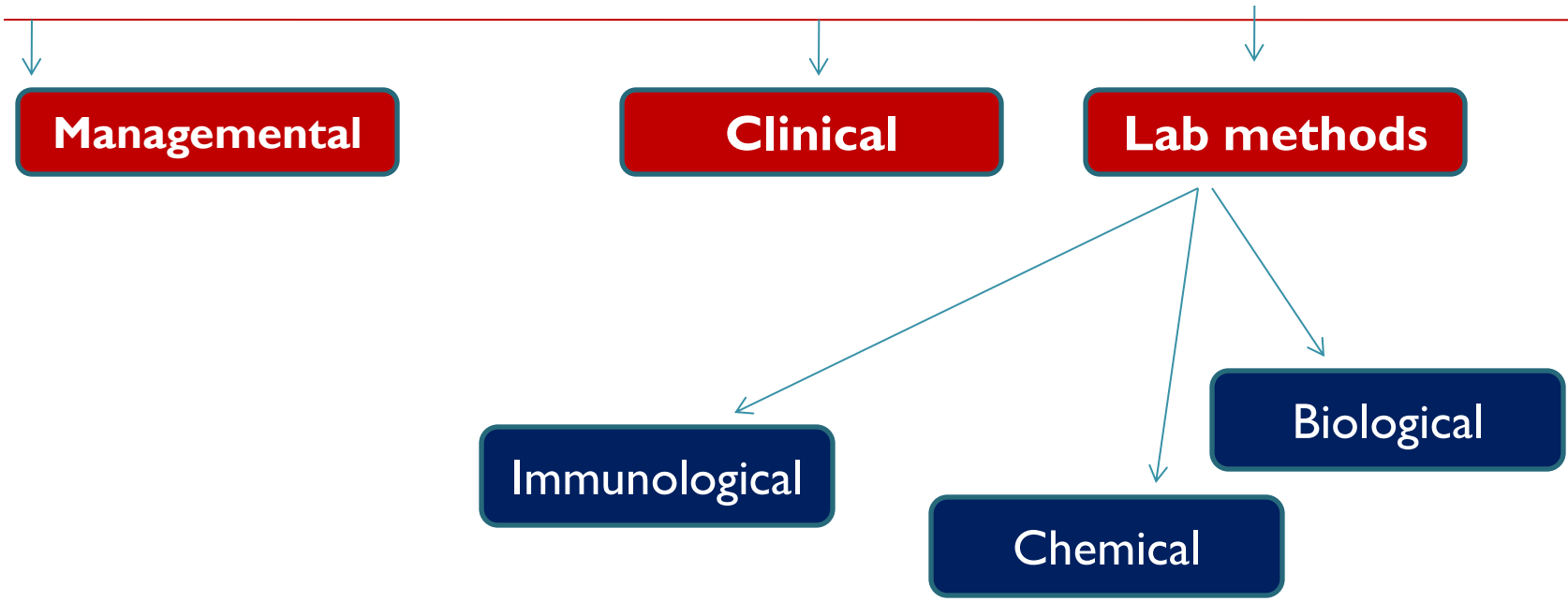
Pregnancy

- Normal physiological condition
- Presence of fetus in uterus

Purpose of pregnancy diagnosis



Techniques


Managemental
Clinical
Lab methods
Immunological
Chemical
Biological

Cattle and buffalo

External indications- just indicators not confirmatory

- Breeding history
- Cessation of estrus
- Increase in abdominal size
- Development of udder
- Change in temperament
- Relaxation of pelvic ligament
- Abd ballotment of fetus
- Fetal heart auscultation

Clinical methods

- Vaginal examination
- Rectal palpation

  Changes in ovaries

  Changes in uterus and its contents

Changes in uterus and its contents

- Asymmetry of uterine horns (30-50 days)

60-70 days

100-110 days

Changes in uterus and its contents

- Size of amniotic vesicle
- 35-40 d- shell less egg
- 45-50d- small hen egg
- Beyond 60d- not detectable

Changes in uterus and its contents

Slipping of fetal membranes (fincher's technique 35-90 days)

May be appreciated till 130-140 d of gestation

Changes in uterus and its contents

- Location of uterus

2nd Month - asymmetry, within pelvic cavity
3rd month – on pelvic brim, cotyledons palpable
4 – 6 Month – Abdominal cavity - Uterus not palpable
7th months – ascending again due to larger fetus
8th month - fetal extremities palpable
9th month – fetal reflex

Can't diagnose

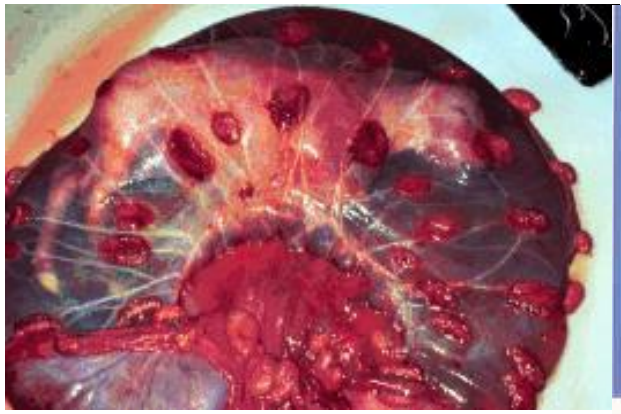
Diagnose only with ultrasound

Some fluid one horn, membrane slip, amniotic vesicle

Fluid, membrane slip, amniotic vesicle

Changes in uterus and its contents

- Palpation of placentomes (80 days onward)


Changes in uterus and its contents

- Palpation of fetus
- The fetus descends out of reach from 3-7 M. You can first feel the fetus at 55-60 days inside the Amniotic Vesicle.
  To estimate an aborted fetus they are:

Fetal head size	Fetal size	
Soft ball	Large cat	~130-140 days
Tennis ball	Small cat	~110-120 days
Golf ball	rat	~90-100 days
Marble	mouse	~60 days

Fremitus

- **Palpation of middle uterine artery (branch of internal iliac artery) (80-120 d onward)-** ↑ed blood supply- whirring/gushing

size of artery- non-preg- 3-4 mm, preg- 1-1.5 cm

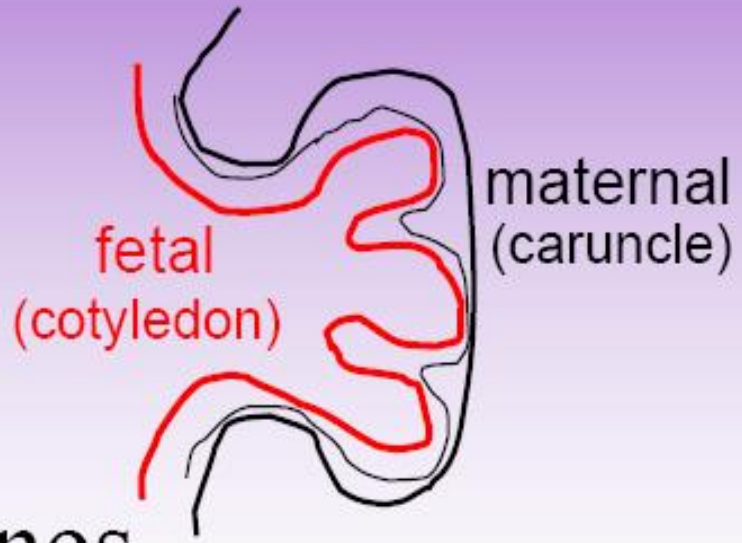
- Fremitus - not a positive sign of pregnancy, but can help.
- At 5 M the artery ipsilateral to gravid horn
- At 6 M both side

Three positive signs of pregnancy?

Things that are pregnancy-specific:

1. Fetus

2. Placentomes



3. Fetal membranes

To confirm <60 day pregnancies

Differential diagnosis

Urinary bladder
Kidney
Rumen

Pathological conditions

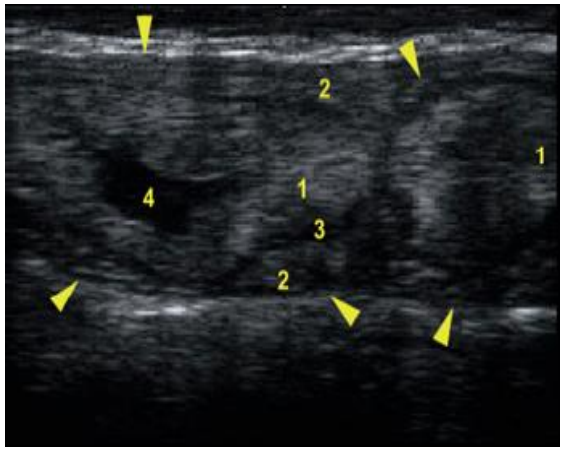
Tumors- uterus (fibroma, leiomyomas), ovary (granulosa cell tumor, lymphocytoma) tumors do not have fluid surrounding them while fetus does have. No fremitus, no membrane slip

Pyometra-
Mucometra/hyrometra } leather like consistency of uterus, no asymmetry, no placentomes and fetal bump.

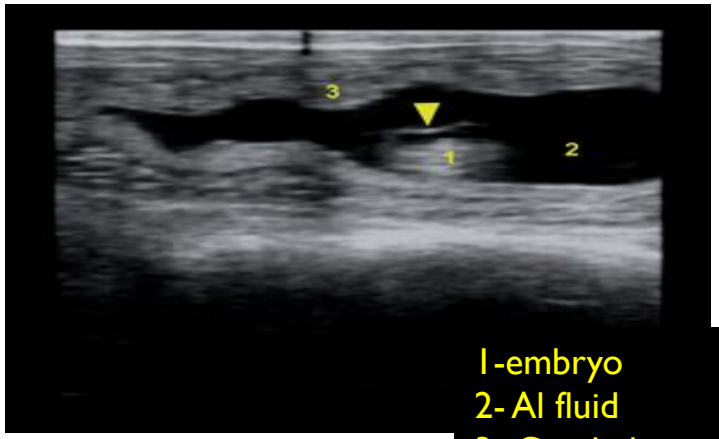
Mummified fetus - absence of fluid, fremitus and slipping of membranes.
Macerated fetus - crepitating on palpation

Ultrasonography

Uterus Day 23

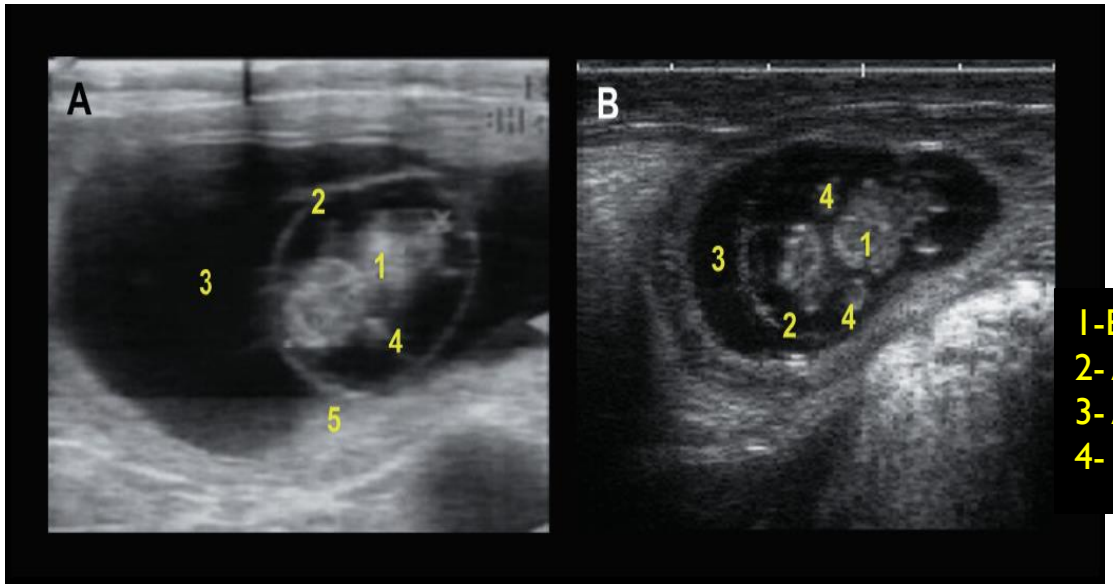


Uterus Day 28-30



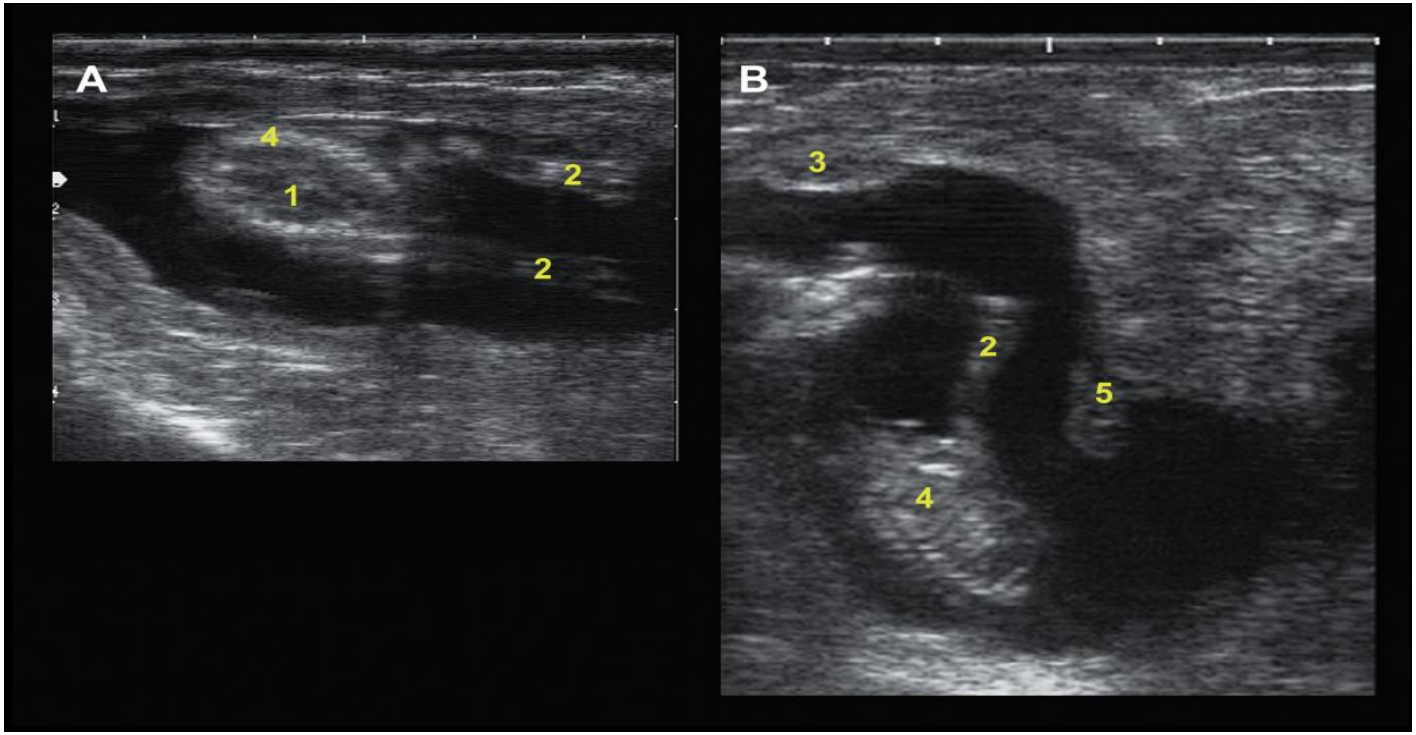
1-embryo
2- Al fluid
3- Cotyledons

Uterus Day 40



1-Embryo
2- Amniotic membrane
3- Allantoic fluid
4- Limbs

- Day 59



Lab methods

- Hormones- RIA/ELISA

P4- blood plasma (>1.0ng/ml) & milk plasma (>11 ng/ml)

False +ve- EED, luteal cyst, Persistant CL

Estrone sulphate- produced by placenta

- milk, urine, plasma

At 72 D of gestation

- Pregnancy associated proteins- in serum by RIA

PSPB (from 24D- till parturition)&

PSP-60 (at 28 day)

- **Protein B (bovine pregnancy-specific protein B) (bPSB, bTP-1)**

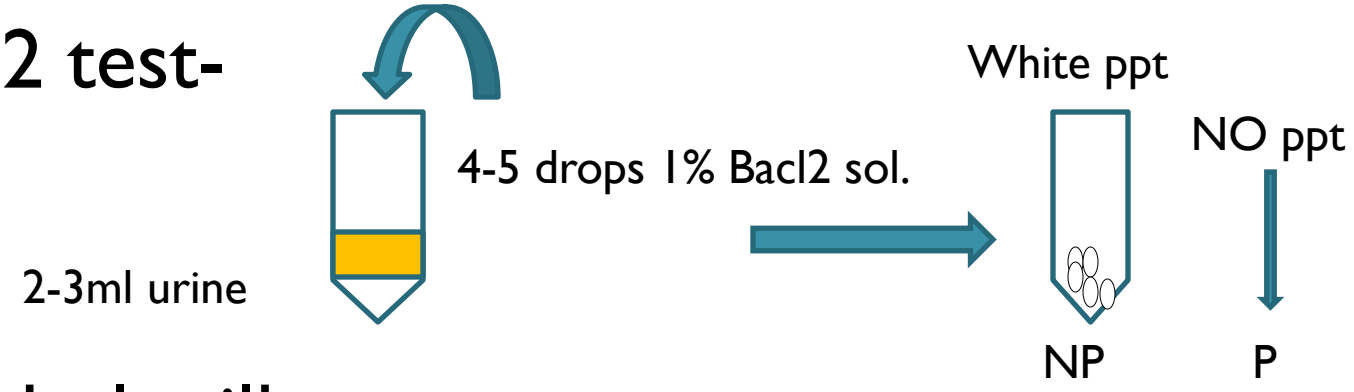
Protein B is secreted by trophoblast cells (binucleate giant cells).

RIA - time consuming and relatively expensive.

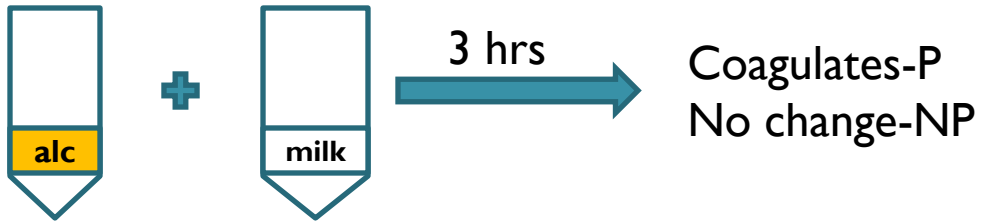
- There are false positives early in the post partum.
- No clinical use.

Chemical tests

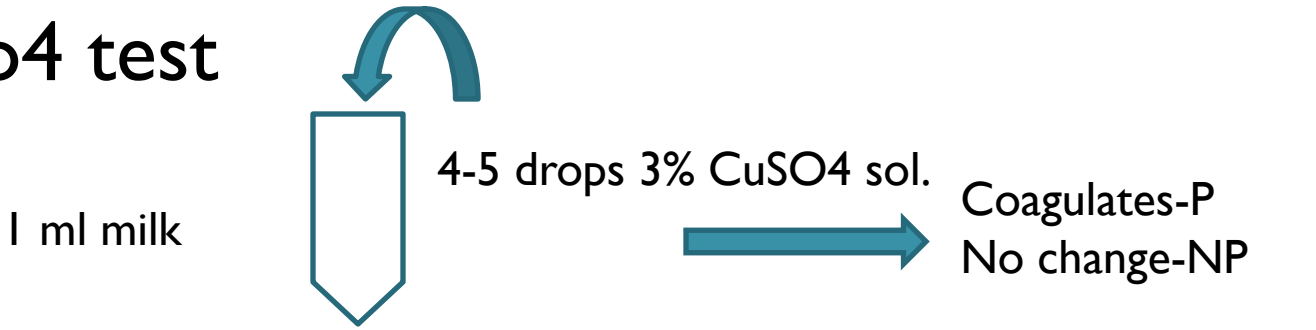
- Bacl2 test-



- Alcohol milk test-



- Cu So4 test



All have low accuracy and increased rate of false + and false -ve

Sheep & Goat- 148 d-sheep,150d -goat

Managemental- cessation of heat

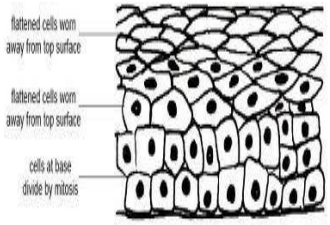
increased abdomen and udder size

Abdominal ballotment- on Rt side, from 3.5-4 Mo

Radiography- after 75-90 days

Ultrasonography- T/abd, at 60 d, T /rectal- 20-22d

Vaginal biopsy- histological exam- 40 d post breeding, strat. Squ. Epi- cuboidal cell



P4 – RIA > 3ng/ml-P, <2ng- NP

Protein B- 7-8 d post mating in blood

Early pregnancy factors- within 24 hrs.

Recto-abdominal method

- On 65-70 d post breeding
- Lubricated rod (0.5-1.5cm dm & 50 cm long) is inserted in through rectum about 30-35 cm
- Put another hand on posterior abdomen
- If pregnant- significant obstruction will be encountered when rod moves side to side or up & down.
- If NP- No obstruction

Sows - 114 d

Managemental- cessation of heat

size & body wt. Increase

Rectal palpation- thin, soft ball like fetal unit at the level of cornual bifurcation after 90-100 days

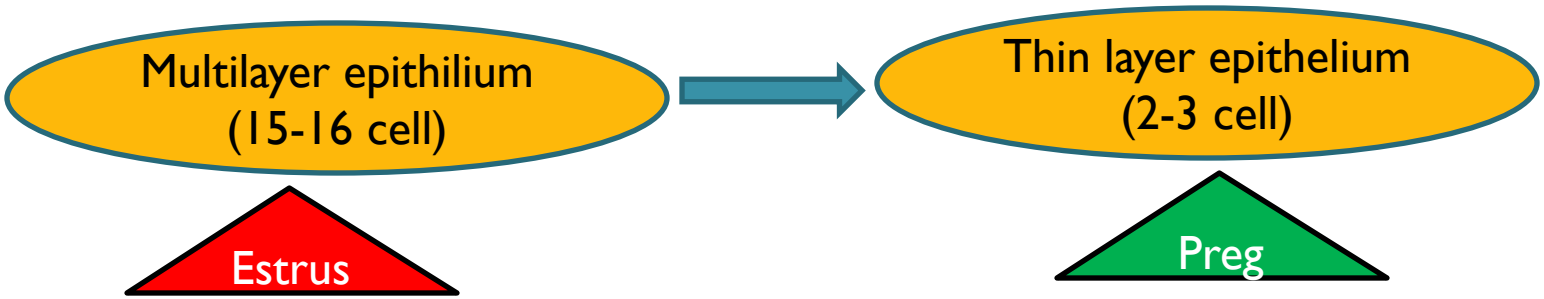
Fremitus- after 40 d or more of getstation

Ultrasonography- 24 days after breeding

P4 – RIA 7 ng/ml-P,

Estrone SO4- 26d post mating in blood, urine

Vaginal biopsy- at 30-35 d post mating from ant vagina



False + ve- if biopsy taken from Cx

Bitches- 62 days

Managemental-

abd size & bd wt. Increase (35 d onward)

Increased teat size (35-45d onwards)

Abd palpation- ovoid shape ping-pong ball like str. Of 1.5-3.5 cm dm, at 28-32 d

Radiography- after 35-45 days

Ultrasonography- T/abd, at 25-28 d onward

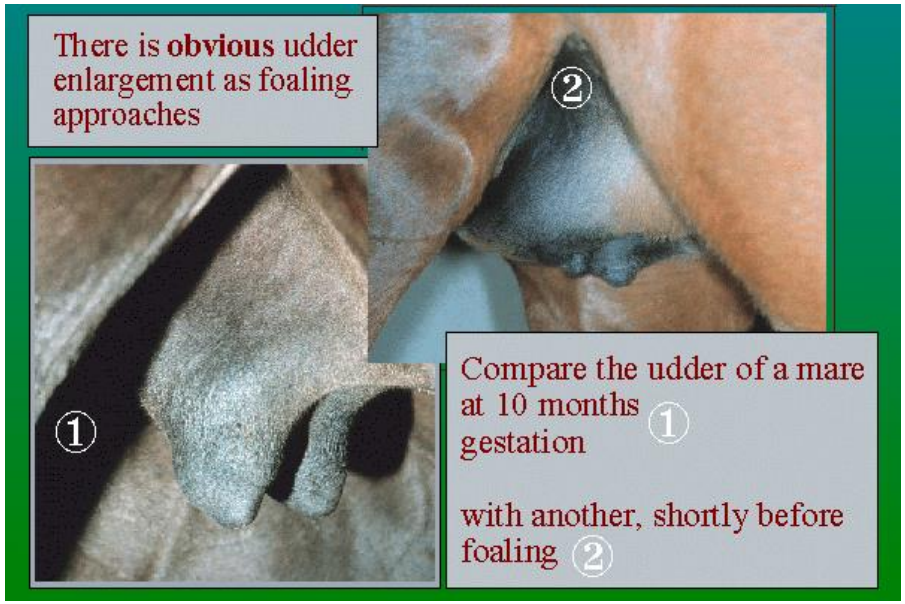
Relaxin assay- at 20-30 days

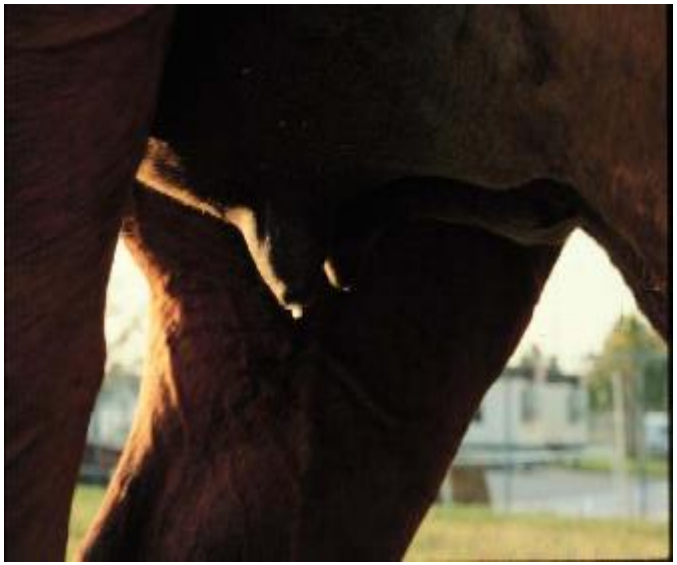
Mare - 340 days

Managemental- cessation of heat
abdomen (7-8 m) and udder size (3-4 wks before foaling)

Waxing of teat (few hrs to few days before foaling)

Sweating- few hrs to few days before foaling at flank & elbow

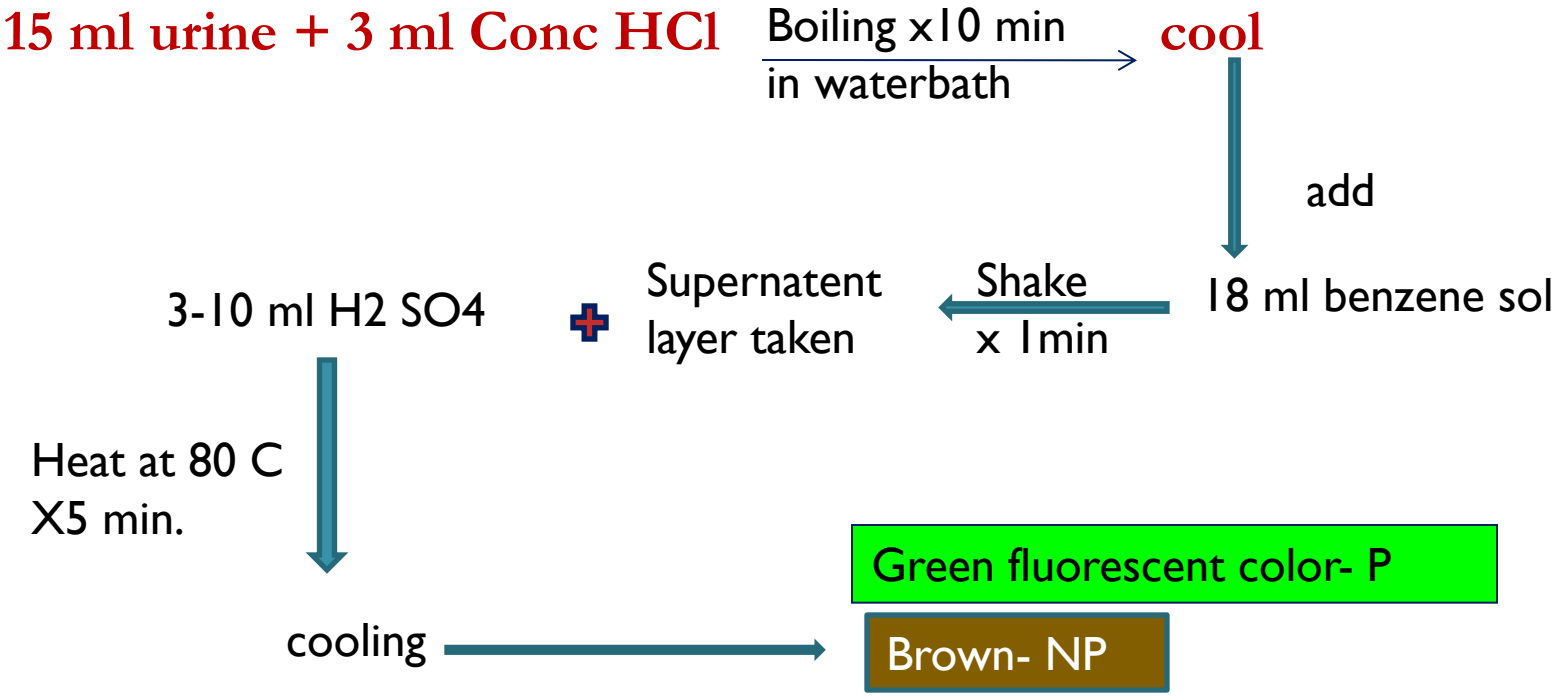




Rectal palpation

- D21-28- embryonic vesicle (bulging of 3.5cm),
- Most practical time – 35 days post breeding amnion size- golf ball, good ut.muscle tone
- At 42-45d- amnion at the junction of ut horn 5 cm dm
- At 60 d- amnion-football shaped, 8-10 cm
- Palpation of fetus- from 90-120 days
- Pulse- middle ut artery, utero-ovarian artery- -after 150d
- 5-7 m- descends of ut continues
- 7-foaling- fetus palpable

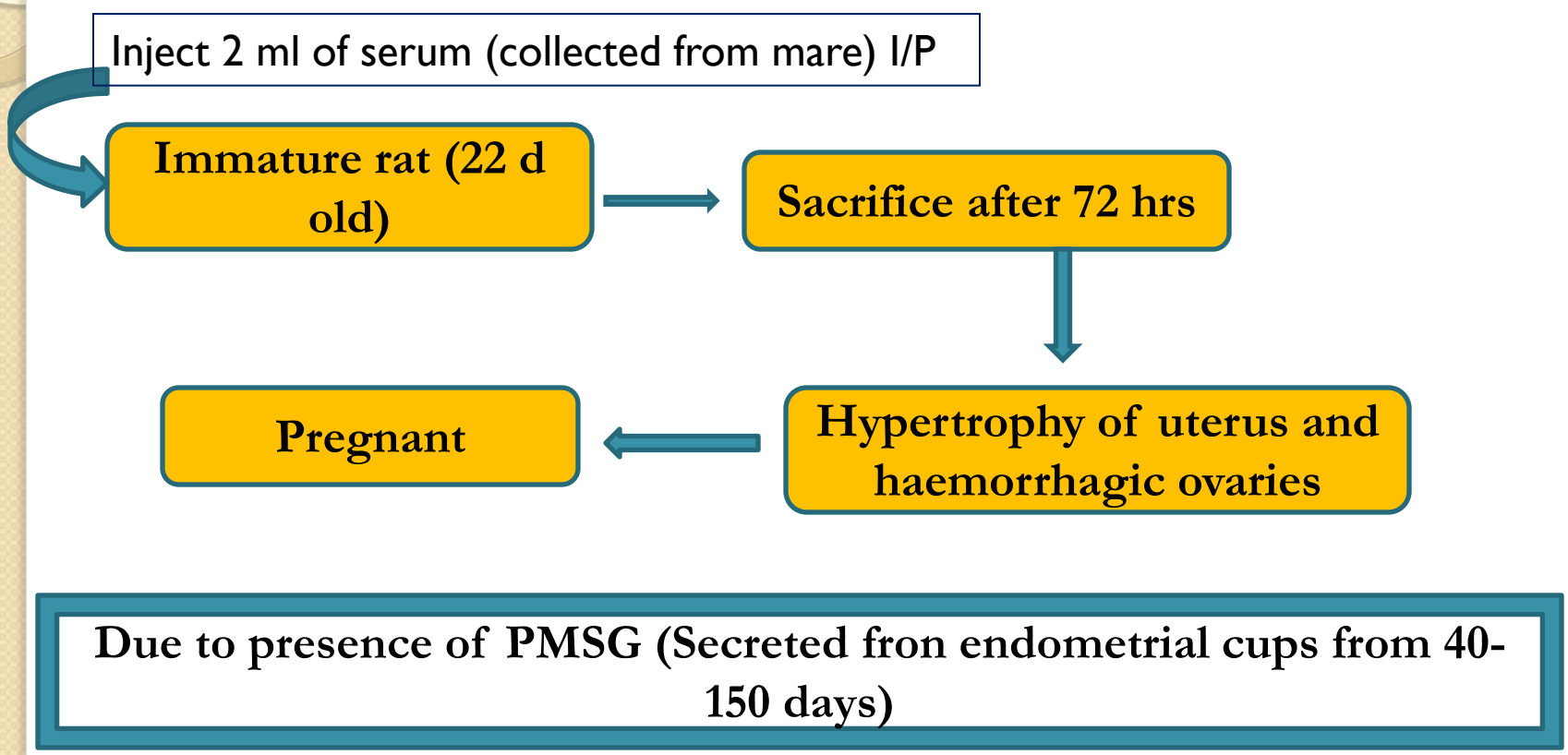
- Ultrasonography- 10-12 d- embryonic vesicle
- Lab methods- chemical test
- Cuboni test- (at 150-290 days b/c urinary estrogens)



- P4- RIA
- Estrone So4- blood, urine milk- at 40-100 d

Biological test

- Ascheim-Zondek test- (50-120 days)



- Toad/Frog test- (50-120 days)