



# Swine Reproduction and Production Management

No Small Subject



# Important References

- **LSU Therio Phillip Hoyt:**

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- **Other:**

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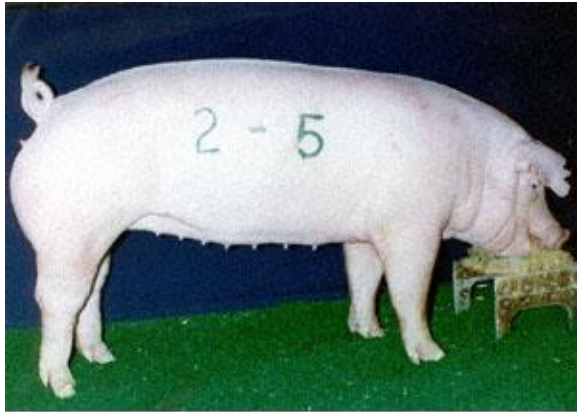
- Wrathall, A. E.: Reproductive Disorders in Pigs

- Marrow, D.A.: Current Therapy in Theriogenology

- Reproductive Examination of the Boar. Journal of the Society for Theriogenology, Volume XIII

# Swine Breeds

Chester White



provided by National Swine Registry

Hampshire



provided by National Swine Registry

Duroc



provided by National Swine Registry

Yorkshire



provided by National Swine Registry

# Reproductive Goals/Facts

- 114 day Gestation (3/3/3)
- 21 day Lactation
- 5 day Rebreeding



140 Day Farrowing Interval

2.6 Litters/year X 12 weaned pigs/sow

= 31.2 pigs weaned per sow per year

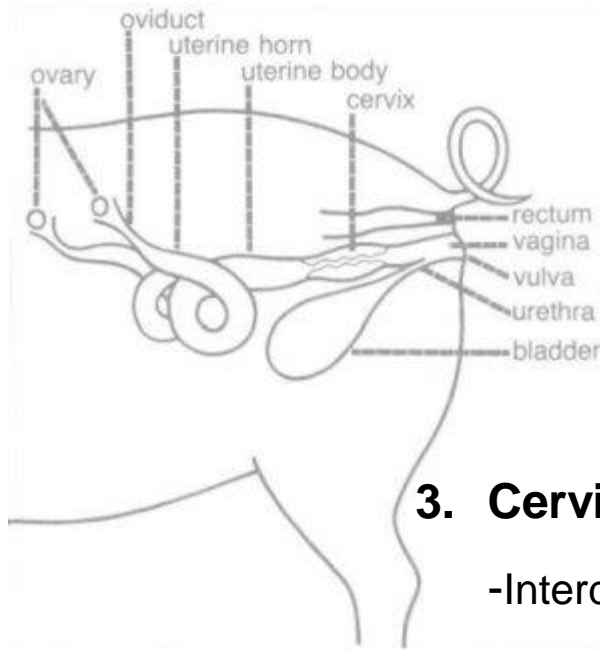
Gilts about 5 less

# Mating Systems

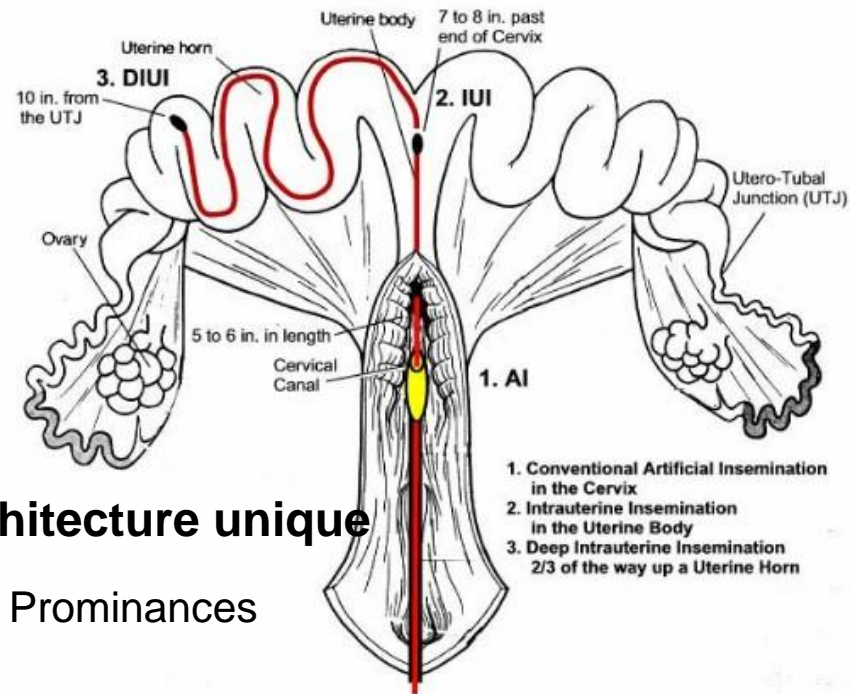
- Double mating – 12 and 24 hr intervals
  - Increased CR, Litter Size
- Pen Mating/Pasture Breeding
  - 1 boar per 10 sows q 23-45 days (cont farrow)
  - Adv/Disdvantages
- Hand Mating
  - Estrus sows taken to breeding pen (boar)
- AI

# Female Anatomy

1. Pregnant horn > 1 meter in length



2. Epithelial-chorial placentation



3. Cervical architecture unique

-Interdigitating Prominences

# Puberty

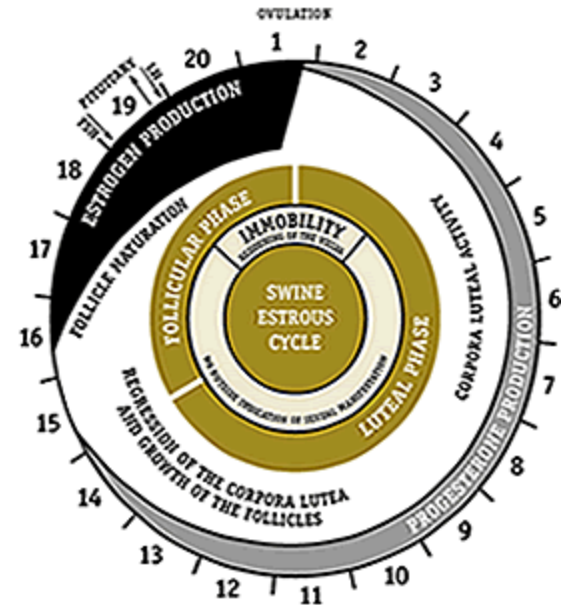
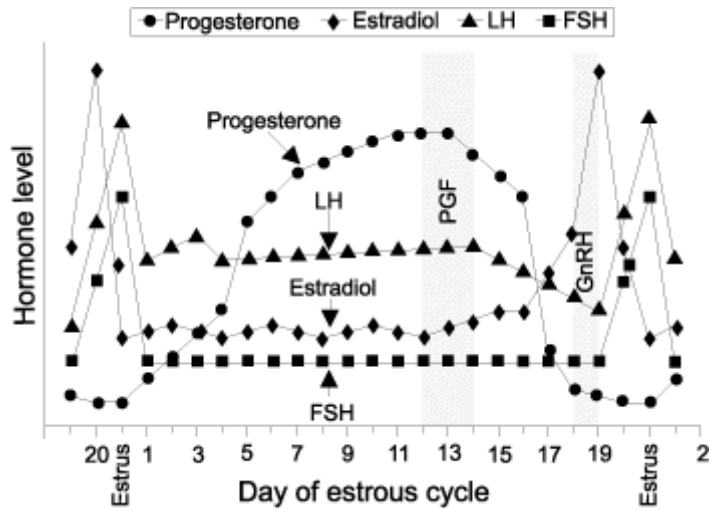
- 150 – 250 days (mean = 200 days)
  - Cross Breeds < Land < Yorks < Durocs
- Can be Delayed/Hastened by # of Factors
  - Inbreeding, nutrition, confinement, lighting, boar exposure
- Earlier in Boar

# Estrous Cycle 21 days

- Proestrus 1-3 days
  - Alert to boar but will not accept
- Estrus 3-4 days
  - Physical and behavioral signs
  - Ovulation occurs mid-late estrus
- Diestrus 14 days
- Metestrus 2 days



# Estrous Cycle



# Ovulation and Fertilization

- Ovulation - last 1/3 estrus q 2hrs
  - Rates Avg 17 sows 13 Gilts (Heritable)
- Fertilization - All or non response
  - Optimal breeding is 12-24 hrs after start estrus
  - Sperm viable for 24 hrs
  - 1<sup>st</sup> Serv CR 70 – 90% (preg rate?)

# EED

- 30-40% between day 1 – 114
  - 50% during 1<sup>st</sup> 25 days
- Intrauterine migration
  - Migrate up to 12 days
  - Need 4 viable embryos for MRP day 12
  - Need 2 viable embryos for MRP day 30

# Preg Detection

- Non Return to Estrus
- US at 30-90 days (preg/open)
- Rectal palp?

# Parturition - Farrowing

- Can induce – PGF<sub>2</sub> $\alpha$  10mg at day 112 gestation
  - 60-90% farrow within 18-36 hrs
- Duration 2- 24 hours
  - 2 piglets/hour
- Lactation
  - Colostrum Important
  - Milk let down – 28 sec
  - Nurse every hour
  - 32 hours to establish teat order

# Estrus Synch - Sows

- Primarily done by weaning (18-24 days)
  - 10 mg PGF<sub>2</sub> $\alpha$  within 24 hrs post farrowing and 5 ml PG 600 at weaning (reduces anestrous)
  - PG 600 = 400 IU PMSG and 200 IU hCG
    - mimicks FSH and LH

# Estrus Sync - Gilts

- Various protocols
  - PG 600 5-6 months old =
    - 50-70% estrus in 5-7 days (often DNB)
  - PG 600 (day 0) + Lut (day 18) =
    - estrus (day 20-25) = Pig Sync?
  - Feed progestin (Penmate<sup>tm</sup> Regumate<sup>tm</sup>) day 0-21 + lute day 35 =
    - estrus day 37-42

# Reproductive Problems

- Many management and breed factors
  - Repro tract deformities common in gilts 5-10%
- Disease(s)
  - SMEDI Syndrome
    - Stillborn, mummies, ED, infertility
  - Viral and Bacterial Causes
  - Humans



# Viral Repro Disease

- Syndrome I
  - Fatal to embryo or fetus but dam normal
  - True abortion rare = more EED
  - Parvo, enterovirus, Jap B encephilitis
- Syndrome II
  - Maternal morbidity, late term abortion
  - Psuedorabies, hog cholera, swine influenza

# Bacterial Repro Disease

- Lepto – typical serovars
  - Mild signs in adults, typical pathogenesis
  - Abortion, mummification, stillbirths
  - Vaccine available
- Brucellosis
  - EED and abt
  - Eradication and reportable

# Male repro facts

- Semen
  - 3 fractions- presperm, sperm, postsperm gel
  - 250 mls with  $150 - 500 \times 10^9$  cells
- Ejaculation pressure dependent 3-20 minutes
- AI with fresh chilled semen common
- Published BSE values

# Discussion

