Horse Breeding Techniques

8901-B
Objectives

• Explain why we do ultrasounds on horses;
• Explain the methods of teasing a mare;
• Explain the signs to see if a mare is in heat;
• Discuss the types of natural breeding in horses;
• List advantages to pasture breeding;
• Identify methods of restraining a mare for hand mating;
Objectives

• Describe what the job of the handler is during hand breeding;
• Explain what artificial insemination is;
• Defend why we collect horse semen;
• Compare and contrast what a diluter and an extender is; and
• Write a paper that would give valuable information to a person looking into artificial insemination.
Overview

General methods of mating horses include:

- Naturally, by pasture mating
- Naturally, by hand mating
- Artificial Insemination
Heat Detection

- Heat - another term used for estrus & is period of breeding activity

- More exact you can be about the mare being receptive & time of ovulation = fewer times the stallion will need to breed the mare
Heat Detection

- **Palpation** - examining by touch or feel

- **Ultrasound** - vibrations used to view internal tissue masses
  - Can be used to detect ovulation
  - Identify changes in the reproductive tract
  - Aid in establishing mating times
Heat Detection

- *Teasing* – exposing mare to active stallion
  - Look for specific reactions
Heat Detection

- Mares can be teased by bringing them to a stallion one at a time, or allowing several mares to be near teasing stallion at once.
Heat Detection

- Some type of barrier or restraint should separate mare from teasing stallion so that injuries or premature mating will not occur.
Heat Detection

- If horses are being teased in enclosed pens without walls or partitions, it is necessary for each horse to have a handler.
Heat Detection

• Signs the mare is in heat:
  – Flexing pelvis
  – Raising the tail
  – Frequent urination
Heat Detection

- Spreading of hind legs

- "Winking" of vulva

- Standing to be mounted

- Allowing stallion to nip and chew on flanks and neck
Heat Detection

- *Winking* - sign of estrus, indicated by opening & closing of the vulva
NATURAL BREEDING
Pasture Breeding Advantages

- Reduces labor
- Convenient for horse owner
- Catches mares shy about breeding
- Results in high *settling percentage*
Pasture Breeding

- *Settling percentage* - percentage of bred mares that conceive

- Disadvantages:
  - Lowering number of mares stallion can serve
  - Can make exact breeding dates difficult to determine
  - Some risk to stallion
Breeding by Hand Mating

- Most expensive horses
- Retrain mare to prevent injury to stallion
- Allow stallion to pursue breeding process under control of handlers
Breeding by Hand Mating

- Mare should be restrained in breeding stock or breeding hobbles
Breeding by Hand Mating

- Prevents mare from seriously kicking stallion & causing physical harm

- Additional restraint methods include:
  - Raising one of mare’s front feet
  - Applying twitch to nose
Breeding by Hand Mating

- Breeding sanitation consists of:
  - Wash genital areas with mild soap solution
  - Binding tail of mare with gauze or cloth to prevent interference from hairs
Breeding by Hand Mating

- Handler should direct stallion to approach from directly behind mare
- Handler should help guide stallion’s penis into vulva
Breeding by Hand Mating

- Do not allow stallion to be rough or strike during breeding process!
- Stallion will flag tail before dismounting after ejaculation
Breeding by Hand Mating

- Some stallions will dismount before they ejaculate.

- If in doubt, handler should put pressure on urethra to surface semen at end of penis to be sure stallion inseminated mare.
Breeding by Hand Mating

- *Urethra* - canal through which urine & semen are discharged in male

- After stallion dismounts, handler should wash & disinfect genitals of stallion & mare
Breeding by Hand Mating

- One good way to get high settling percentage is to hand mate mares near end of breeding season

- Turn stallion with mares to identify & pasture breed shy mares & those that did not conceive
ARTIFICIAL INSEMINATION (AI)
Artificial Insemination

• Some advantages in breeding program

• *Venereal disease* control is possible if semen is diluted with antibiotics
  
  – Decreases number of disease-producing organisms entering mare
Artificial Insemination

- *Venereal disease* - disease transmitted by breeding

- Chance of injury to horses & personnel also lower

  - Especially if stallion’s semen is collected with aid of a *phantom*
Artificial Insemination

- *Phantom* - object used for stallion to mount for obtaining semen, rather than using a mare
Artificial Insemination

- Overuse of stallion less likely because each collection is usually enough to breed several mares

- Permits evaluation of semen for quality periodically
Semen Collection

- When mare bred by AI, semen must first be collected from stallion
- Requires veterinarian or experienced horseperson
Semen Collection

- Semen is collected in artificial vagina as stallion mounts live mare or breeding phantom
Semen Collection

- semen must be processed by filtering & evaluated for:
  - Volume
  - Concentration of spermatozoa
  - Presence of microorganisms
Semen Collection

- *Diluters* or *extenders* may be useful for antibiotic & antibacterial treatment
  - *Diluters* - any of several types of fluids used to dilute & increase volume of semen
  - *Extenders* - any diluters with additives to extend lifespan of sperm cells
Semen Collection

- Mare prepared by wrapping tail & washing genital area
- Inseminator inserts specially designed *catheter* into vagina
- Deposits semen into uterus
Semen Collection

- *Catheter* - slender tube inserted into body cavity for drawing off or administering fluids

- AI or breeding should take place just before mare ovulates
Semen Collection

- Sperm remains capable of fertilizing egg for at least 72 hours in mare’s reproductive tract
- Egg may be fertilized up to 24 hours after ovulation
- Good idea to breed mare every other day while in heat
Semen Collection

- If mare is palpated to determine exactly when she ovulates, then she should be bred once just before ovulation.

- If mare ovulates before breeding, it reduces chances of conception occurring.
Semen Collection

- Accurate records must be maintained of all breeding & horse reproductive activities

- Records help producers maintain efficiency & improve breeding rates
Summary

- Three general methods of mating horses:
  - Naturally, by pasture mating
  - Naturally, by hand mating
  - Artificial insemination
Summary

• More exact horseperson can be about receptivity of mare & time of ovulation, the fewer times stallion will need to breed mare

• Mare in heat will be receptive to stallion & exhibit certain signs or actions
Summary

• Pasture mating:
  – Reduces labor
  – Convenient for horse owner
  – Catches mares that are shy about breeding
  – Results in high settling percentage
Summary

- Most expensive horses are hand mated
- Person restrains mare to prevent injury to stallion while allowing stallion to pursue breeding process under control of handlers
Summary

- Artificial insemination requires a veterinarian or experienced horseperson.
- Reduces transmission of venereal disease & injury to horses or personnel.
Summary

- Accurate records must be maintained of all breeding & horse reproductive activities
- Helps producers maintain efficiency & improve breeding rates