Veterinary Biological Products

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Objectives

- Describe modified live vaccines
- Describe killed vaccines or bacterins
- Discuss proper handling of vaccines
- Discuss proper vaccination procedures
INFECTIOUS VACCINES (ANTIGENS) – Active Immunization

TYPES:

- modified live vaccines – intramuscular, subcutaneous, intranasal

- modified live vaccines (body temperature sensitive) – intranasal
IMMUNITY DURATION:

- Annual to life-time (infection established, cellular and humoral immunity)
- one initial dose required
- annual boosters may be required
CAUTION:

- label restrictions (may be unapproved for pregnant cows/nursing calves)

- ineffectiveness (following non-infectious vaccine)
NON-INFECTIONOUS VACCINES (ANTIGENS) – Active Immunization

TYPES:

- killed vaccines and bacterins – intramuscular, subcutaneous
- toxoids and leukotoxoids (subunits) – intramuscular, subcutaneous
- modified live vaccines (body temperature sensitive) – intramuscular
IMMUNITY DURATION:

- 4 to 12 months (infection not established, humoral immunity)
- primary dose required (priming)
- secondary dose required – 3 to 6 weeks later (within 3 months)
- annual or semiannual boosters required
DNA RECOMBINANT VACCINES
(Antigens) – Active Immunization

- Genetic engineered
  - Virulent genes deleted (modified-live)
  - Genetic material isolated (subunits)
ANTISERA/ANTISERUM (ANTIBODIES) – Passive Immunization

- TYPES:
  - antitoxins – subcutaneous
  - monoclonal antibody – oral
DURATION IMMUNITY:
- 2 to 6 weeks (humoral immunity)
VACCINE LABEL HANDLING INSTRUCTIONS

FOLLOW THE LABEL:
- refrigerate in use and storage
- use sanitary practices in use
- keep out of sunlight in use
- properly dispose of opened vials after use
- abide expiration date of unopened vials
VACCINE LABEL USE DIRECTIONS

FOLLOW THE LABEL:

- dose
- route(s)
- withdrawal time for slaughter (21 to 60 days)
VACCINE FAILURES

- NO RESPONSE (efficacy, stress, malnutrition)
- IMPROPER DOSE
- IMPROPER ROUTE
MISHANDLED (non-refrigerated, sunlight exposure, unsanitary)

STORED OPENED VIALS

EXPIRED VACCINE

POOR QUALITY VACCINE
- PRIMARY DOSE ONLY (non-infectious vaccine)
- IMMUNITY DURATION EXPIRED
- VACCINATION AFTER EXPOSURE (incubation period or latent period)