



MVSc Programme VMC-607
Lecture -7

Dr. Pankaj Kumar
Assistant Professor
Veterinary Microbiology

Combined Vaccines

Combined vaccines:

- Vaccine formulations containing two or more than two vaccine components (from two or more pathogens)
- Combining multiple vaccines in one shot
- Single shot protects for multiple disease
- Identification of protective immunogens from pathogens
- Advances in synthetic peptides vaccines, recombinant peptides

Examples:

- MMR - Measles, mumps, and rubella vaccine
- DPT- Diphtheria, tetanus, and pertussis vaccine
- Pentacel, - DTaP, IPV (polio), and Hib
- Multivalent FMD vaccines
- HS/BQ vaccines
- FMD+HS+BQ vaccines
- Multi-component canine vaccines

Combined vaccines – Advantages:

- Reduces number of injections
- Help in formulation of doable vaccination schedule
- Help in completion of schedule in time
- Increases vaccination coverage

Combined vaccines – Advantages:

- Improves vaccine compliance
- Reduces –Chance of injury
- Reduces vaccination cost- cold chain, logistic problems
- Reduces burden on facilities and resources

Combined vaccines- limitation:

- Immunological/physical/chemical interactions between components - can alter the immune response to specific components
- Compromises with efficacy or safety
- Some vaccine components cannot go together
- Sometimes product stability is compromised

Antigenic competition:

- When combining antigenic components- sometimes, a few components induces good response while other do not

Factors – for better vaccination response

- Animals in good health at the time of vaccination mounts better response
- Deworming is recommended a fortnight prior to vaccination. Endo and ecto parasitic load on animal compromises with response generated to a vaccine
- Stressed animals (animals after transportation, under bad weather, poor nutrition, during disease outbreaks)
- Maintain cold chain for vaccines which may have to keep for 2-8 degree Celsius temperature
- Effort should be made with animals to avoid stress after vaccination.

THE END

The images for slides are taken from resources available on internet and used for the purpose of teaching students