

Vaccination Strategies

From Birth to Birth

by

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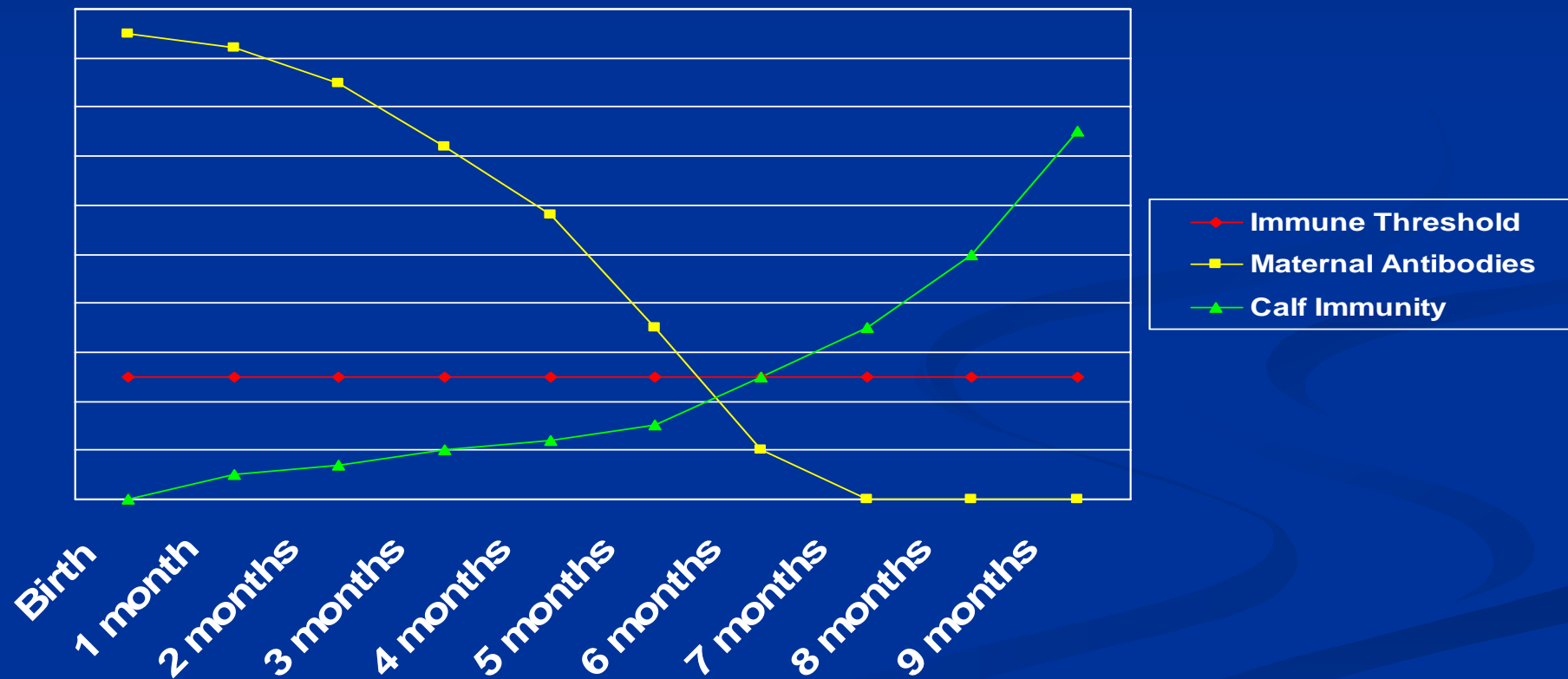
Vaccination Protocols

- No silver bullet, no “right” way
- Key factors
 - Get vaccine into calves
 - Minimize stress on calves
 - 2-4 weeks between doses
 - If vaccinating cows for colostral immunity, vaccinate 4-6 weeks before calving
- Products- (you get what you pay for)

STRESS!!!!

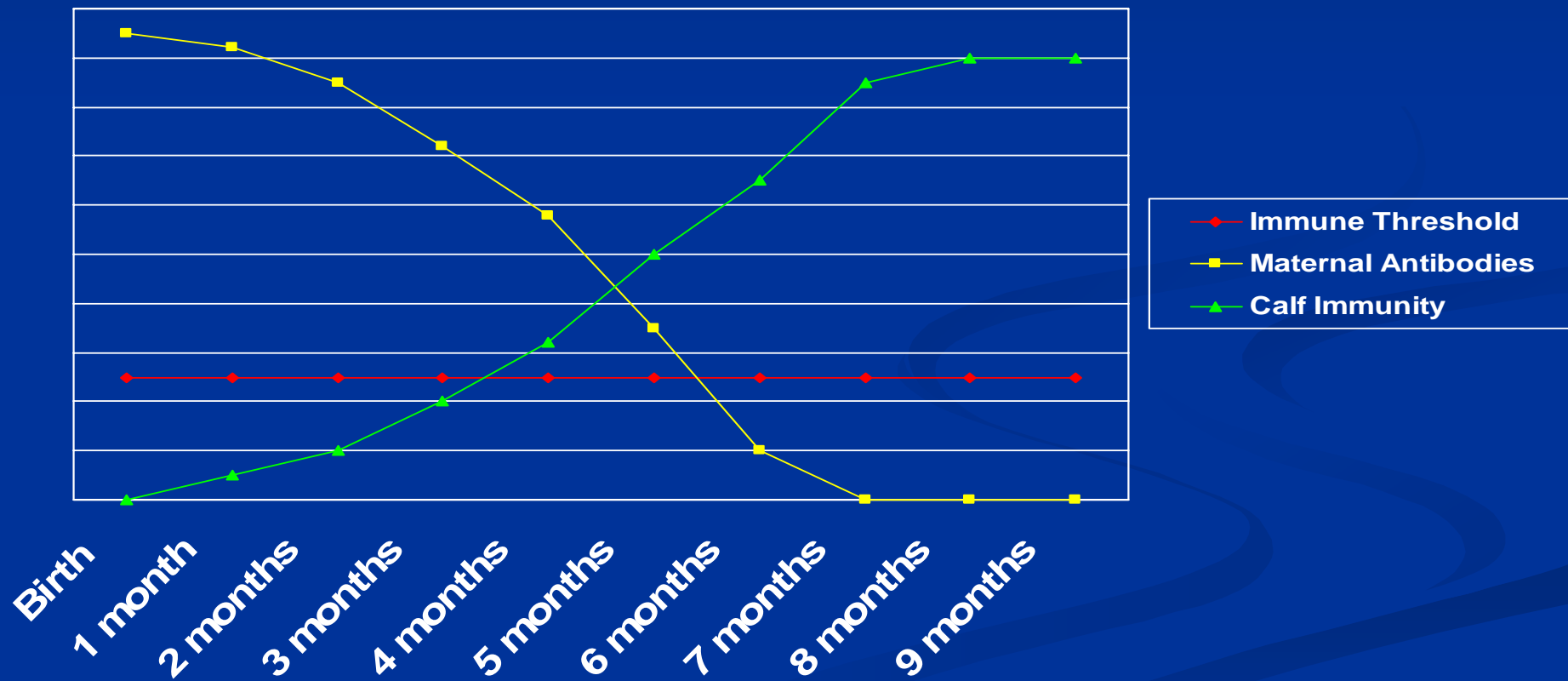
- Why we hate stress
 - Learn from dairy producers
 - Cow comfort
 - Decreased transition cow problems
 - Decreased incidence of lameness
 - Increased milk production
 - Release of cortisol from adrenal gland → immune system suppression → lowered resistance to pathogens/lowered response to vaccine
 - Even though you vaccinated, the cattle may not have responded

Passive vs Active Immunity (vaccination at or near weaning)



Passive vs Active Immunity

(vaccination before weaning)



Modified Live Virus (MLV) vs Killed

■ B lymphocytes

- All vaccines stimulate
- Memory cells
- Produce Antibody
- Next exposure to antigen → high antibody titers

■ T lymphocytes

- Two populations
 - CD4⁺ T cells (helper T cells)
 - Capture and present antigens to other immune cells
 - CD8⁺ T cells (killer T cells)
 - Identify infected host cells and destroy
- Killed vaccines only stimulate CD4⁺ T cells, MLV vaccines stimulate both

Product Handling

- MLV vaccines are precisely that
 - Living, growing, dividing viruses, treat them as such
 - Never let vaccine reach room temp.
 - Mix up only what you will use in 1-2 hours
 - Keep out of direct sunlight
 - UV rays kill viruses
 - If possible, keep everything, including multi-dose syringes, cool while in use

Feeder Calves

- Feedlot Calves
 - MLV, MLV, MLV...
 - 4 Viruses
 - IBR, BVDV, BRSV, PI₃
 - Can cause significant disease
 - Rarely act alone
 - Respiratory bacteria
 - *Pasteurella*, *Histophilus* (formerly *Hemophilus*), *Mannheimia*
 - Normal flora of upper respiratory tract
 - Viruses/stress set up for compromised defenses
 - Vaccine interaction: IBR and *Mannheimia*
 - *Clostridia*
 - One dose usually imparts live-long immunity
 - Booster in high risk situations (i.e. banding)

Herd Replacements

- Replacement Heifers
 - 4 Viruses
 - MLV, MLV, MLV...
 - IBR, BVDV, BRSV, PI₃
 - Respiratory disease in calves, reproductive disease in breeding stock
 - If booster prior to first breeding, get it into them at least 30 days before synchronization or breeding
 - *Leptospira*
 - Lepto component of combination vaccine not great, but better than nothing
 - *Lepto hardjo bovis*? Test the herd first
 - *Clostridia*

Cows and Bulls

■ Breeding stock

■ 4 Viruses

- IBR, PI₃, BRSV, BVDV

- MLV if you can

 - When the cows are open

 - 30 days before breeding

 - Unless you've used Bovi-Sheild Gold FP in the last 12 months

■ Lepto

■ *Neospora*

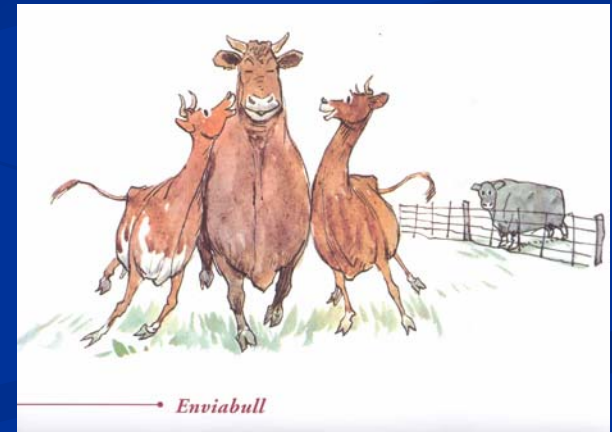
- Growing problem with growing wolf/coyote populations

- Partial protection in naïve animals

- Not worth it if cattle have already been exposed

Other Considerations

- Nutrition
 - Forage analysis
 - Mineral program
 - Adequate energy for growth and production requirements
- Environmental Management
 - Calving rotations
 - Summer pasture rotations
 - Manure Management
- Fertility Examinations
 - Heifer Repro Tract Scoring
 - Bull Breeding Soundness Exam



Be Flexible

- There are many things beyond our control
 - Forage quality/availability
 - Not consistent from year to year
 - Weather
 - Temperature not the only important factor
 - Pregnancy rates this fall
 - Feed intake this winter

Questions?

