

Vaccinology

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Robert Suter

1. Vaccines help reduce antibiotic use
2. Programs need to be farm-specific
3. Vaccines need to be used correctly

COVID-19

Herd immunity

Vaccination

- Choice of vaccine
- Targeting ‘at risk’ groups
- Dosage intervals
- Boosters

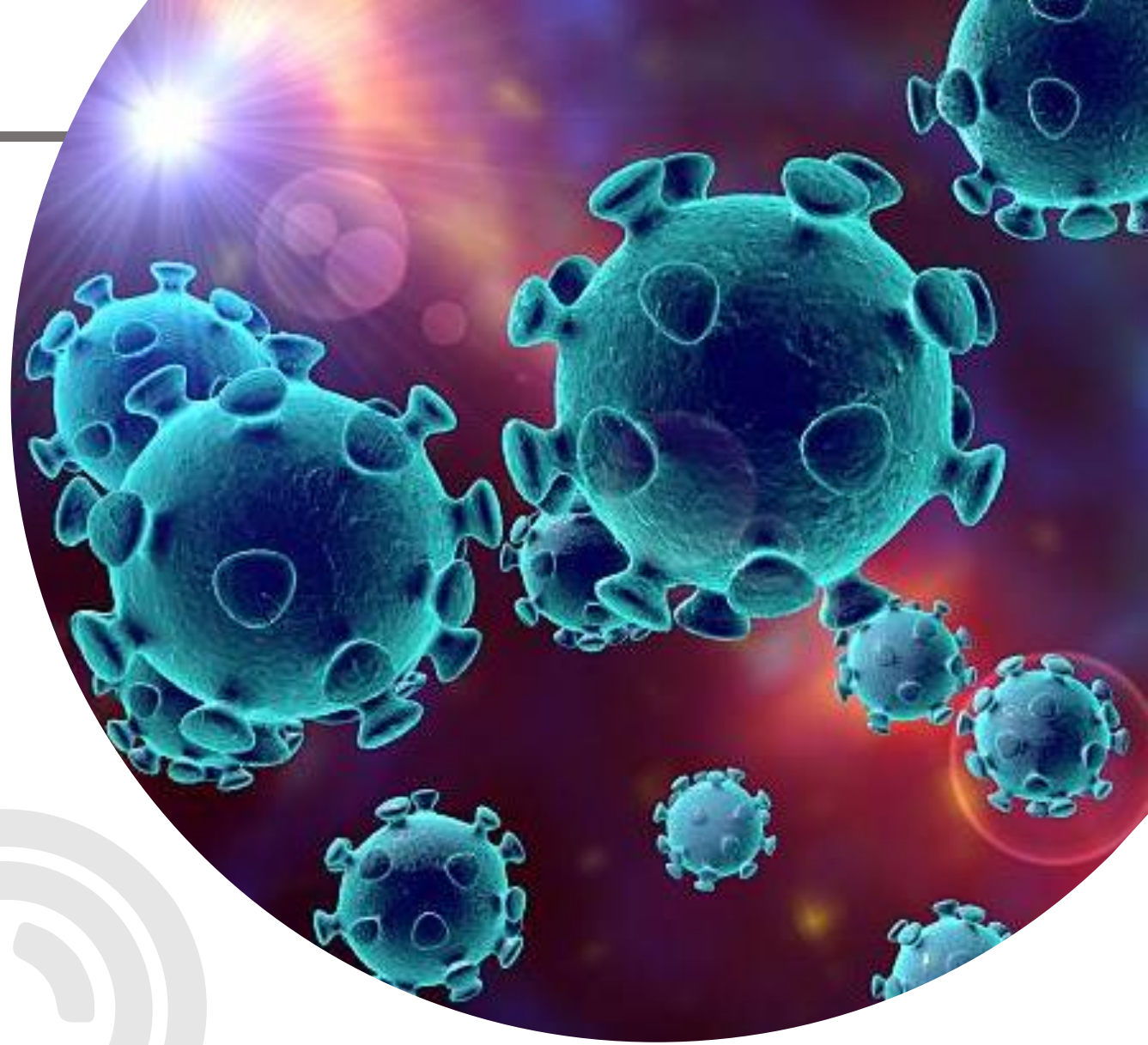
Storage and transport requirements

Adjuvants and mRNA

Immuno-compromise

Disinfection aka ‘deep cleaning’

Quarantine



Immunology

- Innate immunity
- Acquired immunity
  - Naturally acquired
    - Colostrum (passive)
      - Feedback
  - Infection
  - Artificially – vaccines
    - Injectable
    - Oral
    - Intra-nasal



Innate immunity

Inflammation

- Red
- Hot
- Swollen
- Painful
- Loss of use



Acquired natural immunity

Everyday exposure to immunogens

- Bacteria
- Viruses
- Fungi
- Allergies
- Your own body

Protection builds over life



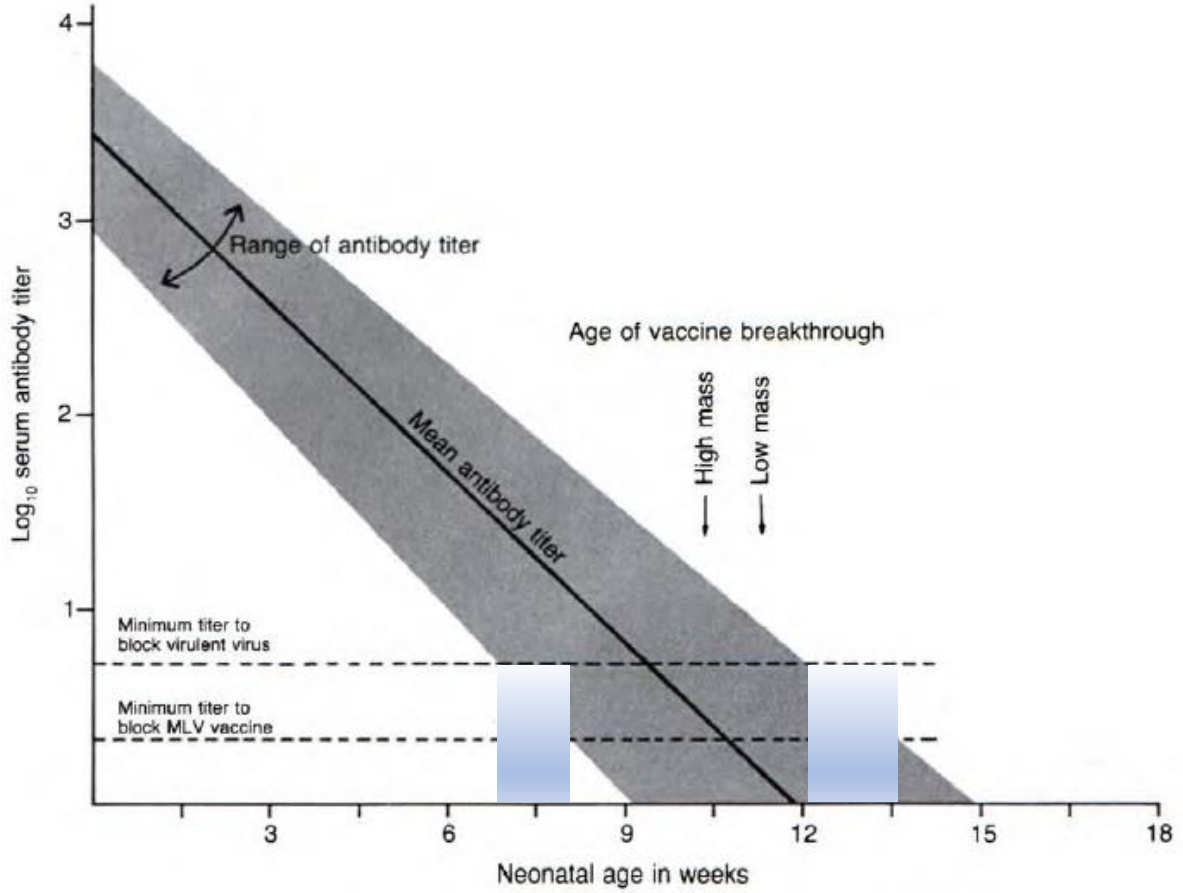
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Colostrum – natural immunity

- Piglet survival depends upon:
  1. Birthweight
  2. Colostrum intake
     - Energy for day 1
     - Passive transfer of immunity

Feedback programs

- Add to natural immunity



Greene, C. Infectious Diseases of the Dog and Cat. 1998

Response to infection

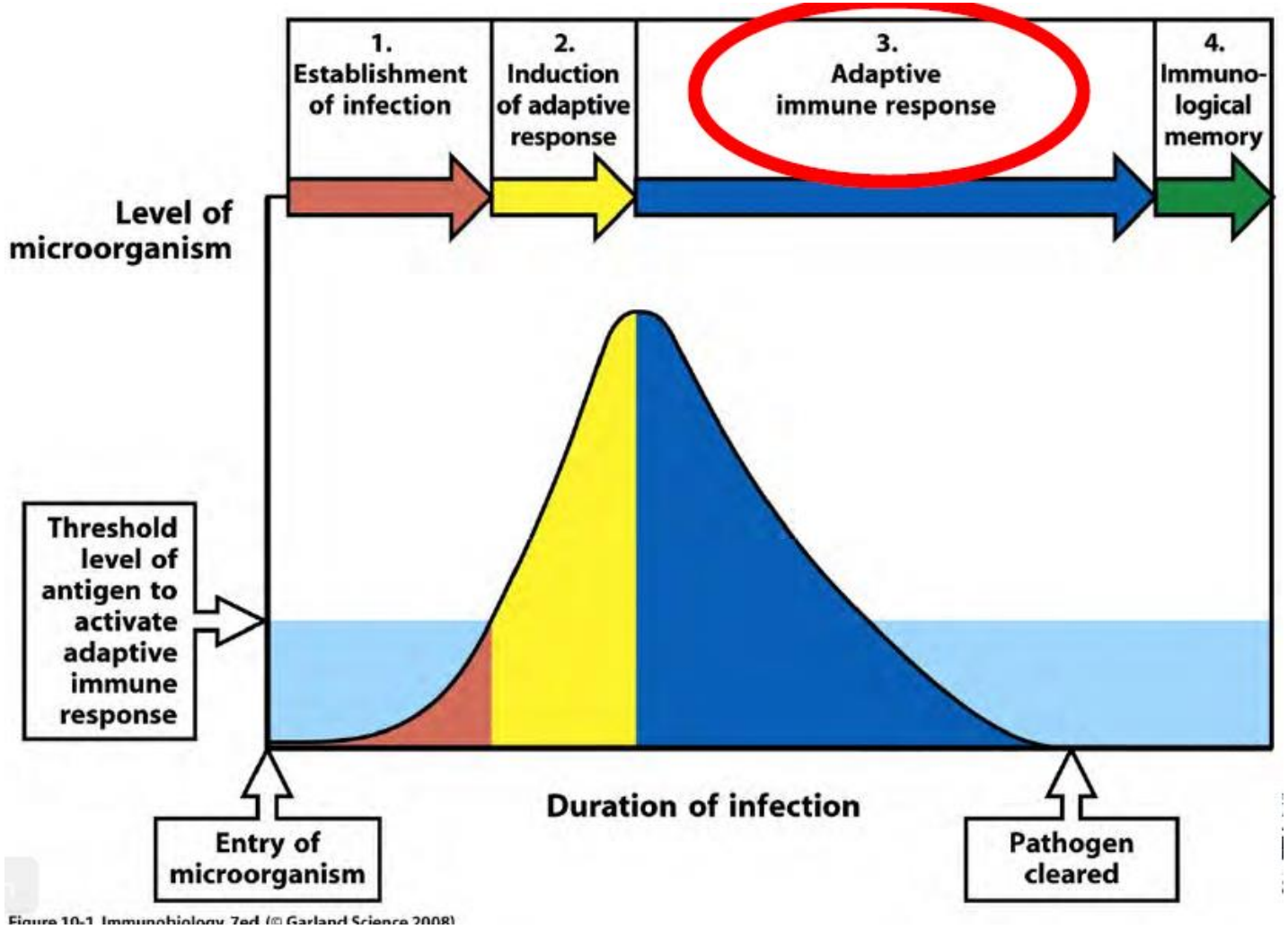


Figure 10-1 Immunobiology, 7ed (© Garland Science 2008)

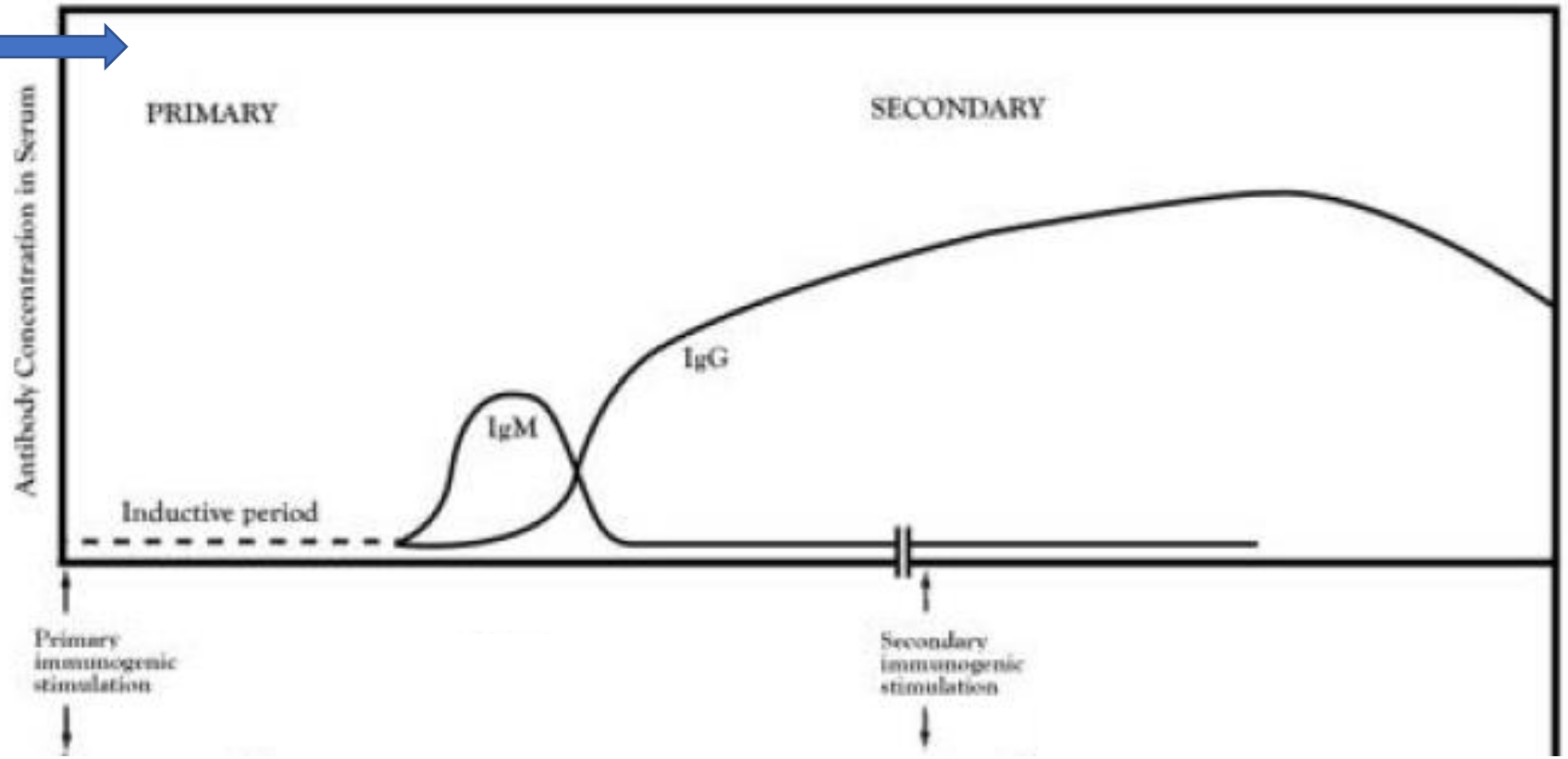
Vaccination

Uses memory response

Various routes

- Oral:
  - Feedback
  - Water
- Injection
- Intra-nasal

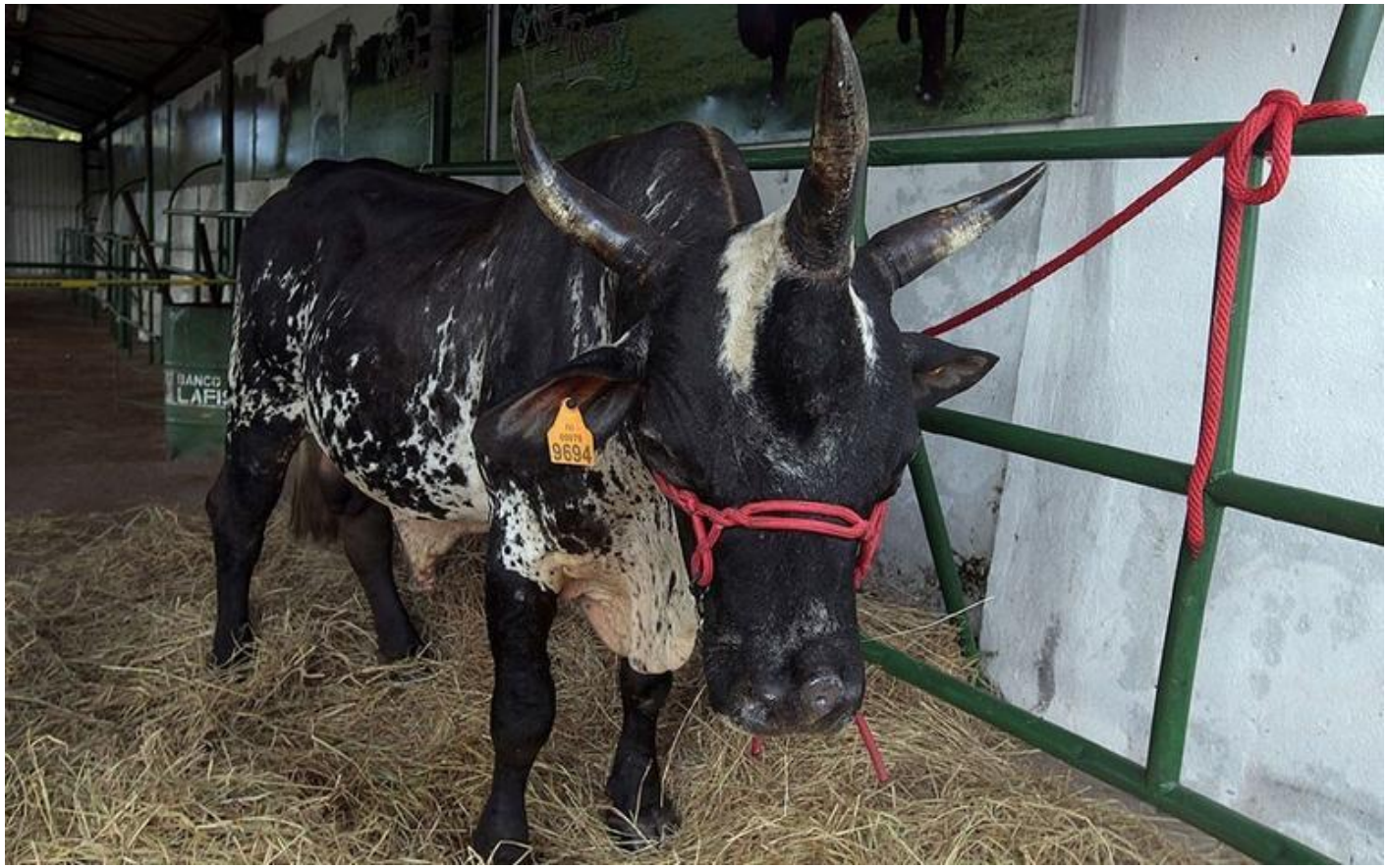
Timing vs challenge



Adapted by James A. Roth (2012) from Bellanti, J.A. 1985. Immunology III. W.B. Saunders. Philadelphia.

Three horned cattle

https://rumble.com/verl1z-the-first-vaccines.html



1. Vaccines help reduce antibiotic use
2. Programs need to be farm-specific
3. Vaccines need to be used correctly

Current vaccines

Reducing antibiotic use

Erysipelas

E.coli

Enzootic pneumonia

PPE – ‘Ileitis’

Glasser’s disease

Pleuropneumonia (APP)

Pasteurella

Streptococcus

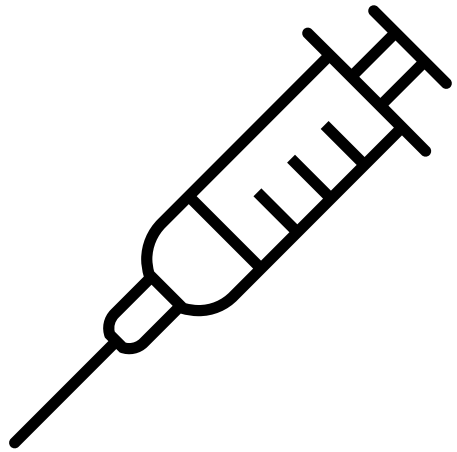
Clostridial

Circovirus

Other vaccines

Leptospirosis

Parvovirus



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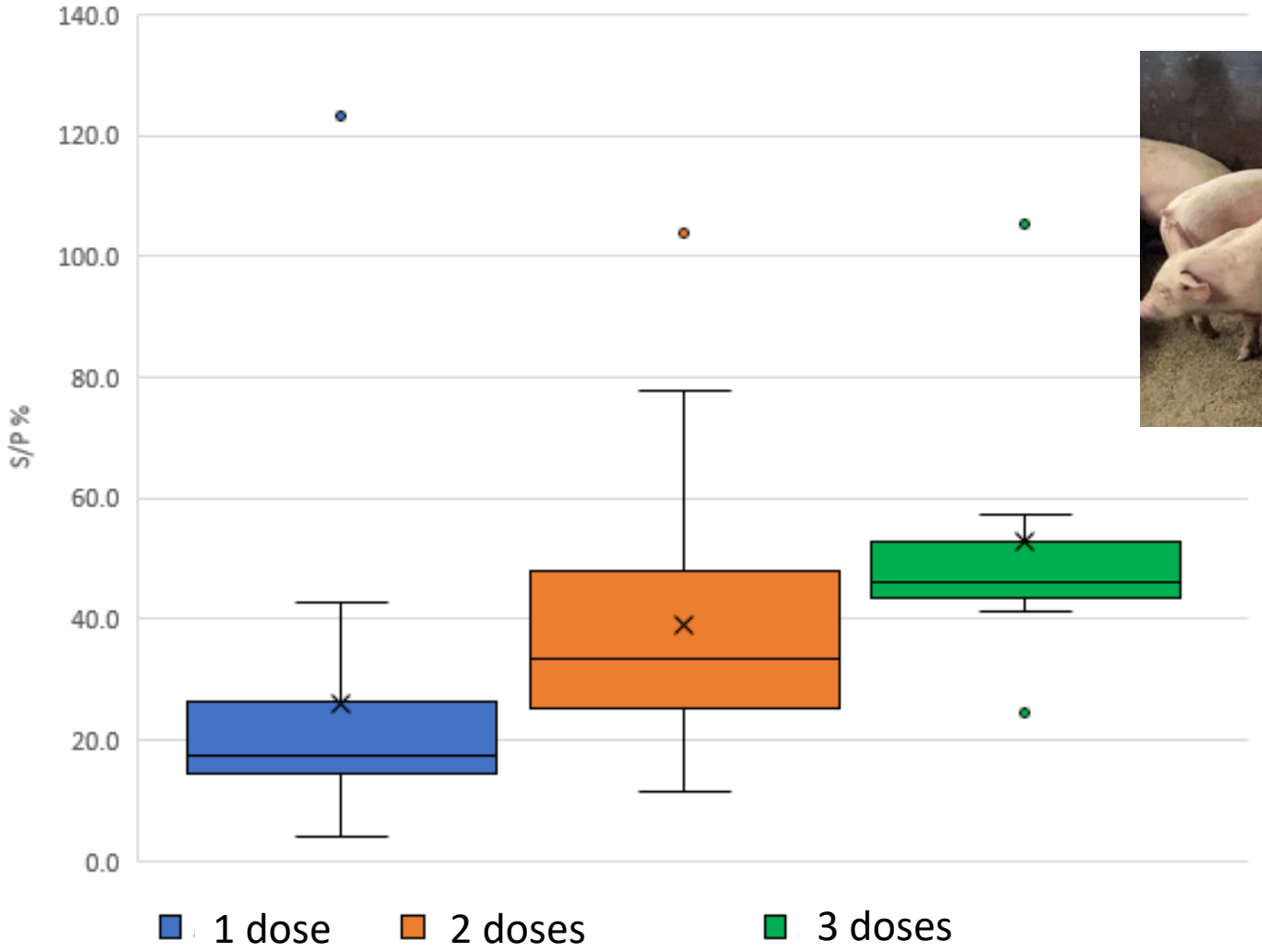
Supporting vaccines

- Hygiene
  - Cleaning
  - Disinfection
- Reduce stresses
  - Temperature
  - Air flow
  - Mixing/aggression
  - Not overcrowded
- Pig flow/segregation





Farm specific vaccine programs





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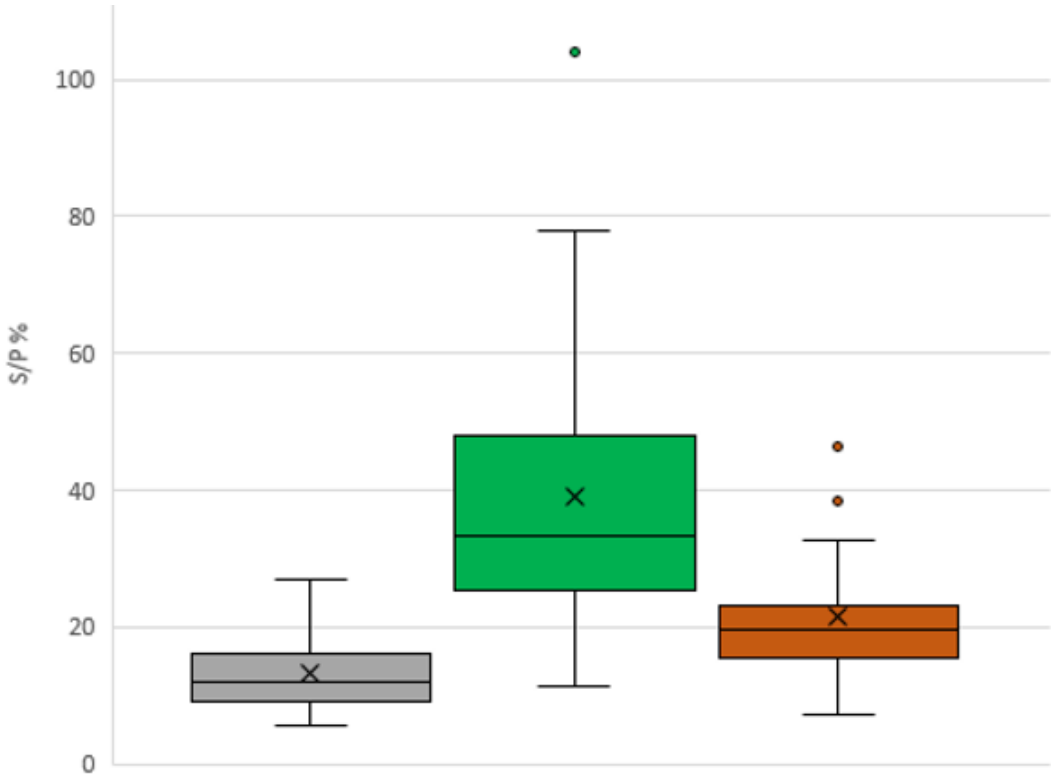


Using vaccines correctly

- Store at the right temperature
- Mix before giving
- Into muscle
- Clean needles
- Every pig

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Operator differences



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