

A close-up, high-angle shot of a vast field of young corn plants. The plants are in the early stages of growth, with bright green, elongated leaves that are slightly curved. The field is densely packed, and the perspective leads the eye from the foreground into the distance, where the plants eventually blend into a sea of green. The lighting is bright and even, highlighting the texture of the leaves.

**If We Build It,
They Will Come**

IDEXX and Antel BioSystems

- Leukosis
- **Pregnancy Detection**
- Neospora
- Bovine Tuberculosis
- Bovine Viral Diarrhea (BVD)
- Coxiella
- Brucellosis
- Fasciolosis

Bovine Leukosis: Time for Another Look?

Bovine Leukemia Virus (BLV)

- **Causes leukosis in cattle**
 - **Retrovirus**
- **Contagious**
 - **Blood - Infected lymphocytes**
 - **Injections**
 - **Rectal Palpation**
 - **In utero/colostrum**
 - **Dehorning, tattooing**
 - **Nasal/Oral discharge**
 - **Insect vectors**

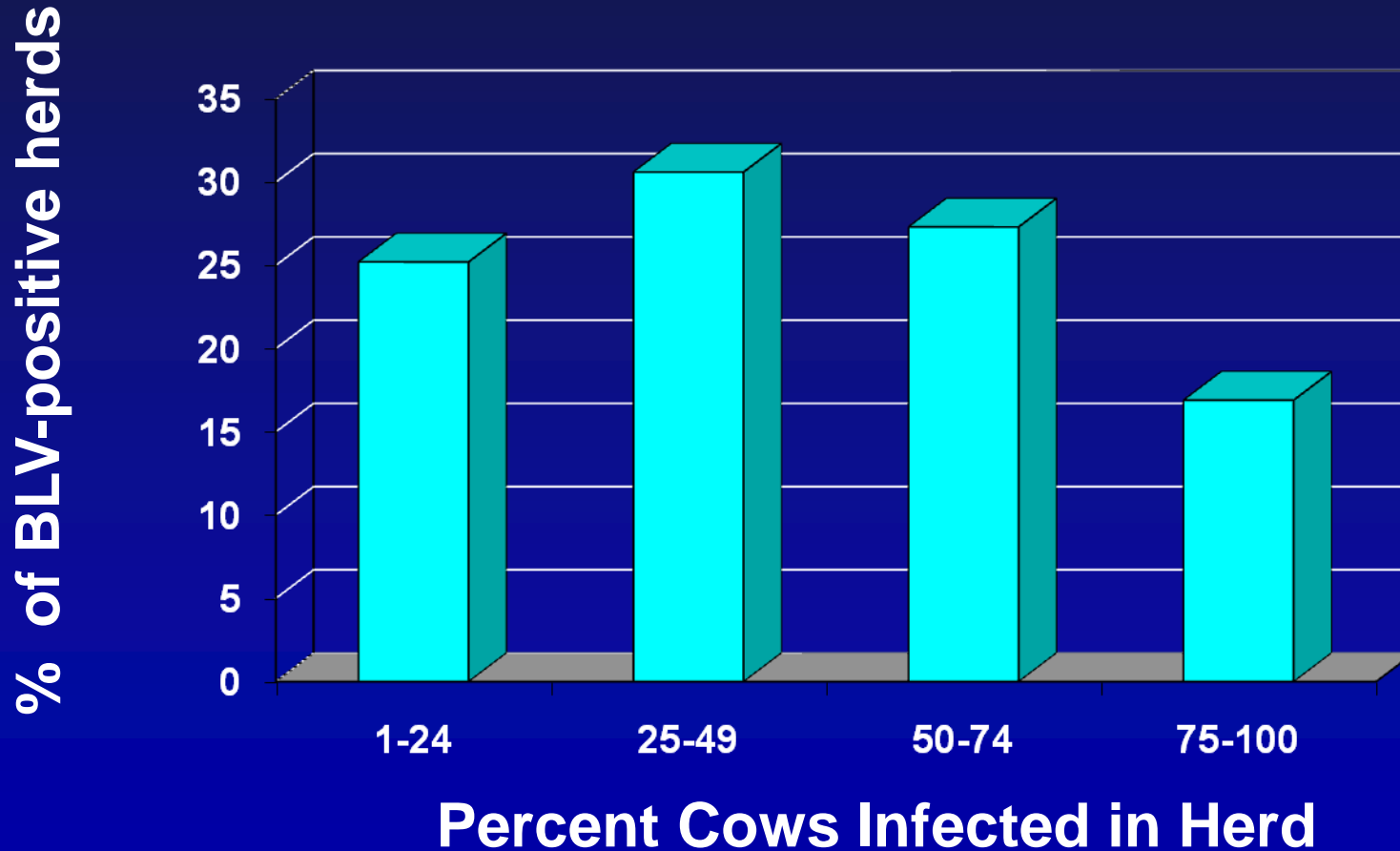
BLV Infection

- Subclinical Infection
 - Most common
 - Show no outward signs of disease for 1 to 8 years after infection
- Persistent Lymphocytosis
 - 30% of BLV infected cattle
 - More infectious because more lymphocytes in blood
 - Higher risk of placental transfer
- Malignant Lymphosarcoma
 - 1 to 5% of infected cattle
 - Variety of signs due to the different tissues invaded by malignant tumors
 - High morbidity and mortality
 - Carcass condemnation



NAHMS- 1996

89% of dairy herds in U.S.



BLV

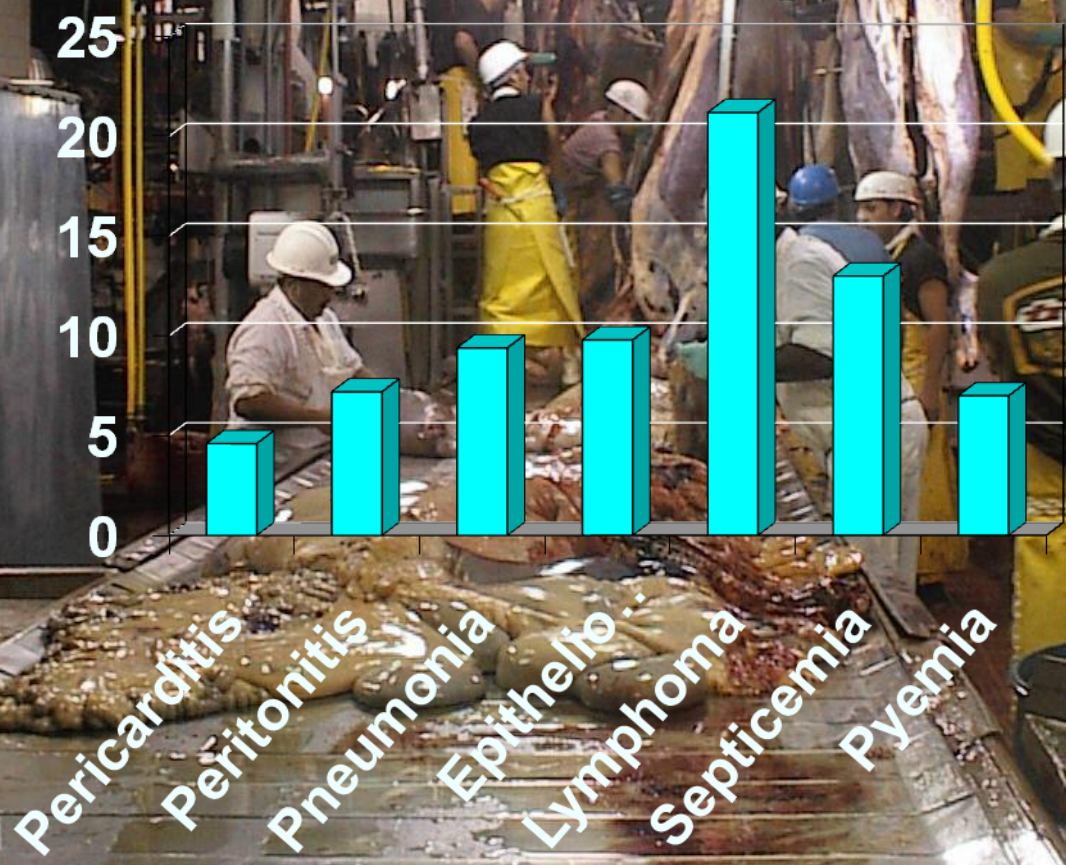
Economic Losses

- **NAHMS- 1996 (Ott et al, 2003): \$59/cow in herd**
 - 45% prevalence
 - Mostly decreased milk
- **VA-MD (Rhodes et al, 2003): \$ 64/cow in herd**
 - 50 % prevalence
- **Decreased reproductive performance and longevity**

Economic Impact

FSIS-ARDS- 2002

% of condemned cows

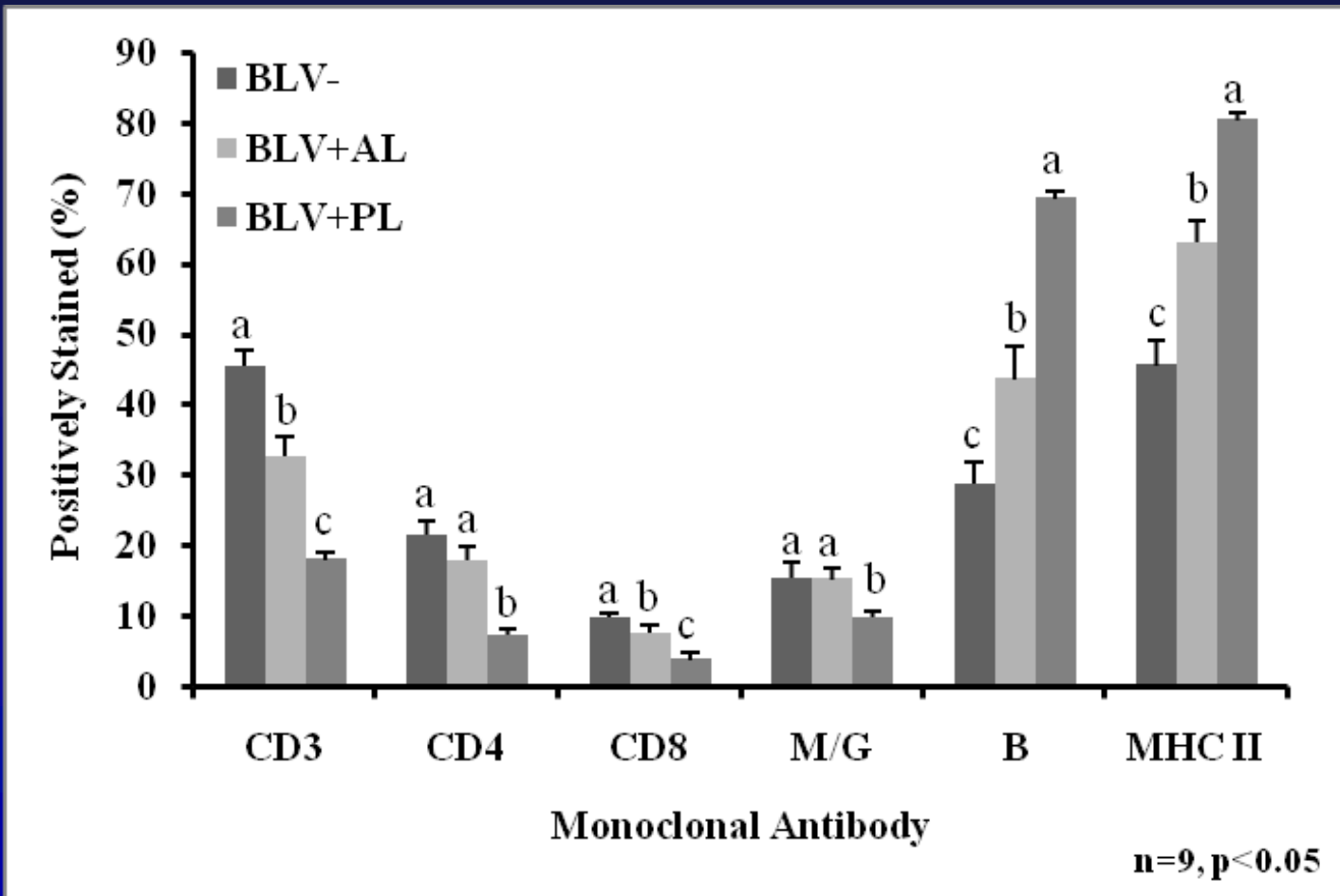


Export Restrictions

- Eradicated in several countries
- Require BLV negative test status
 - > 20 months, must be negative
 - < 20 months, dam must also test negative
- Genomics reducing marketing age

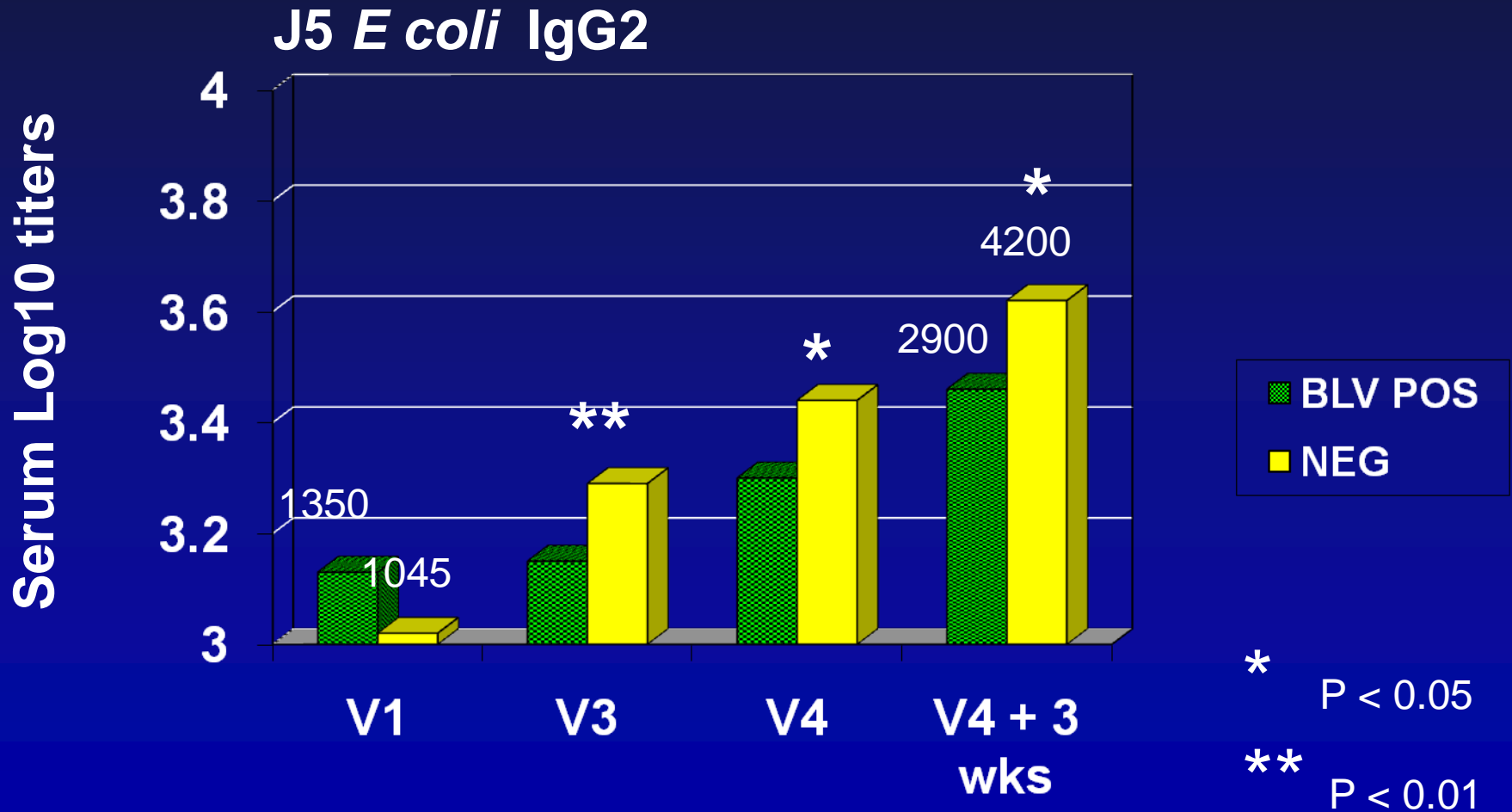
BLV and Immunity

Cell mediated



BLV and Immunity

Humoral

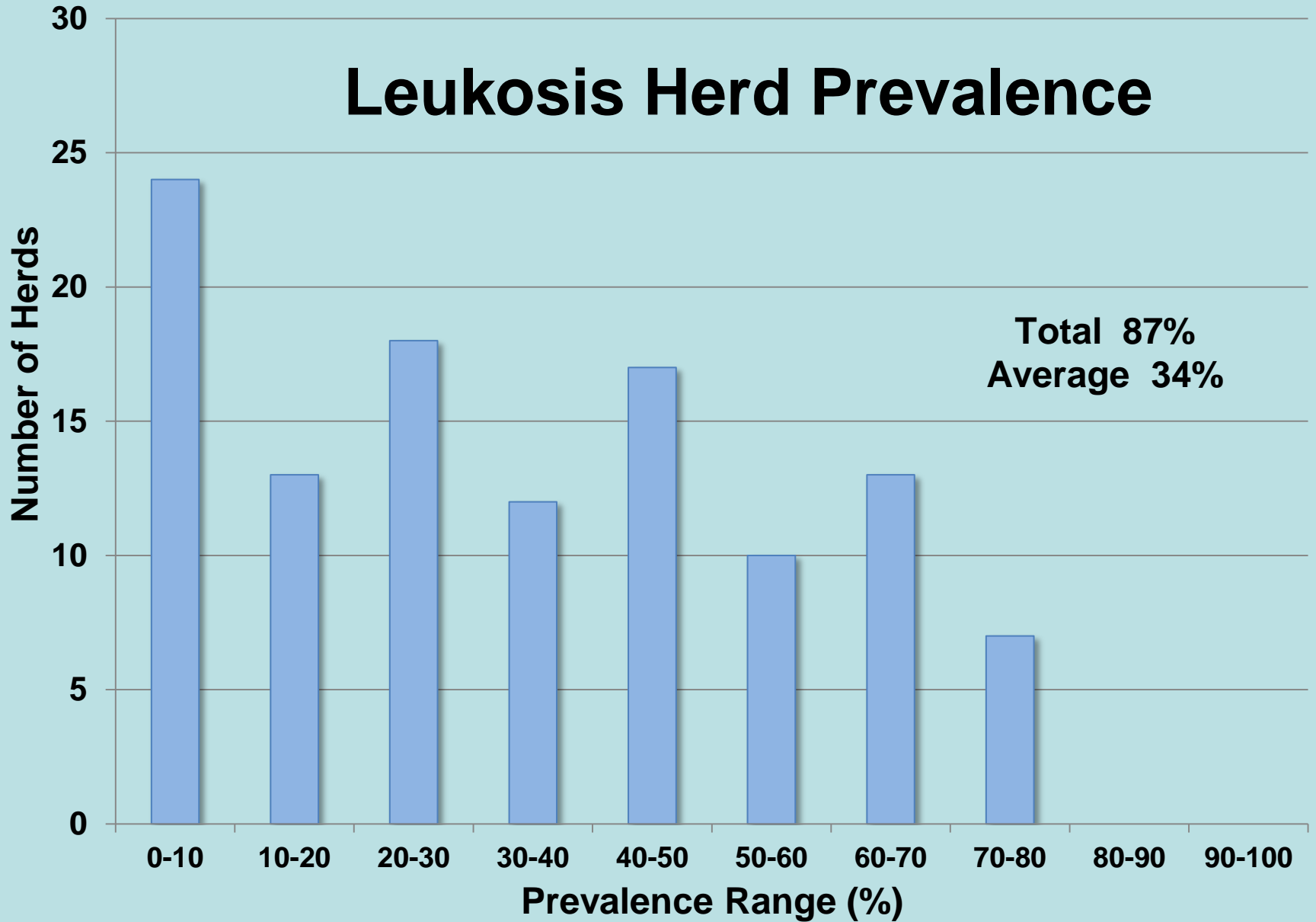


Can we expect infectious or vaccine challenge in BLV infected animals to “normal”?

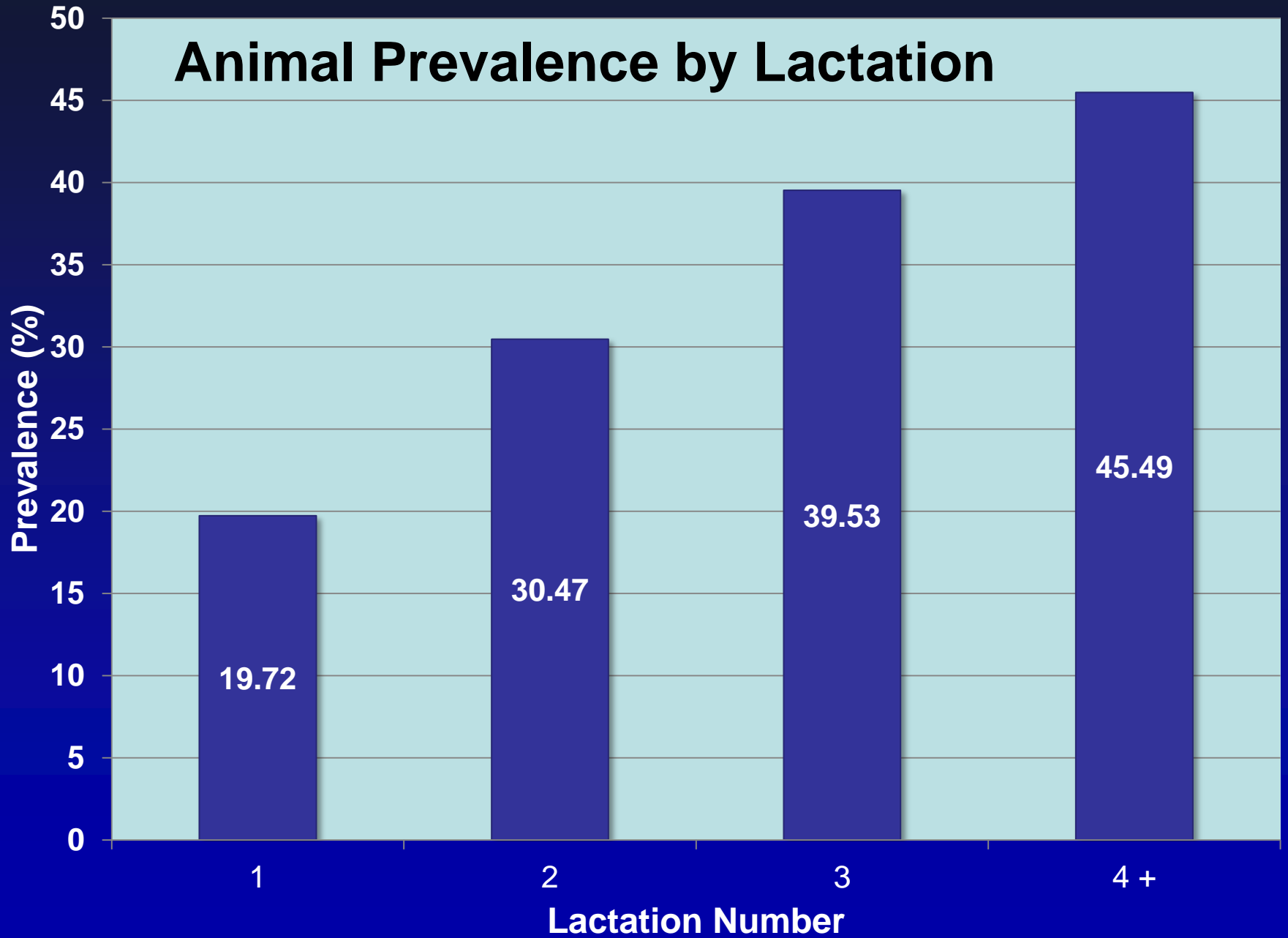
Summer BLV Project

- Funding
 - MSU, AntelBio, MMPA, IDEXX
- Objectives
 - Prevalence in MI
 - Management Factors on Prevalence
 - BLV Profile Index
 - Economic Impact
 - Longevity
- Plus
 - BVDV Antibody Profiling
 - Progesterone Profiling

Leukosis Herd Prevalence



Animal Prevalence by Lactation



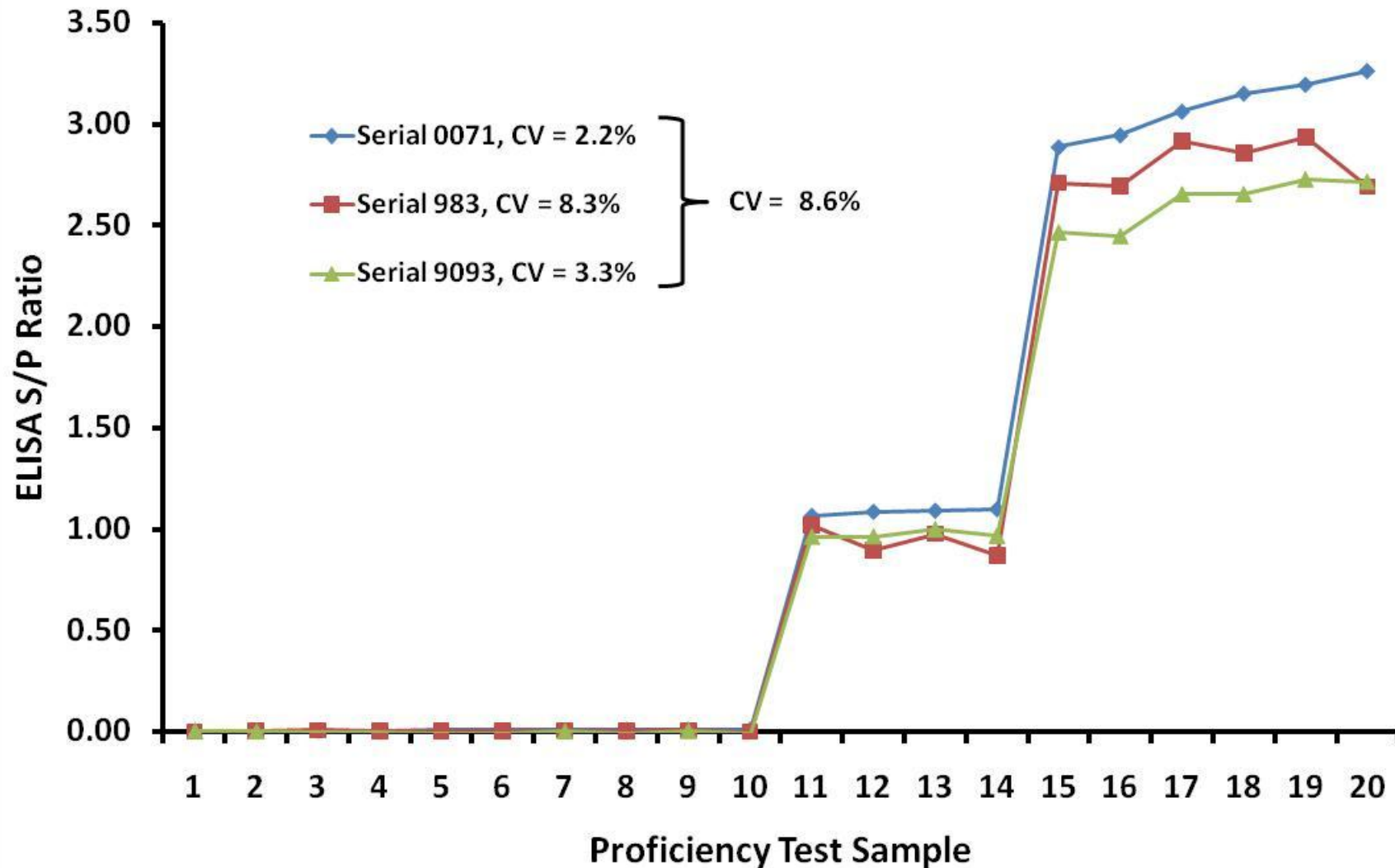
What's Next For Leukosis

- Conclusions
 - Herd prevalence vs animal prevalence
 - Value of DHI milk platform
- Yet To Come
 - Economics and longevity
 - Impact on immune function
 - Interaction with vaccination

QCS Johne's Proficiency Test

- 8 months
- Comments and suggestions
- WDE
- USAHA

Performance of IDEXX® M. pt. Antibody Test Kit Serials on QCS Proficiency Test Panel



Questions?

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Thank you!

Questions