



USAHA

# USAHA BVDV Subcommittee

## 10/23/18

**KANSAS STATE**  
Veterinary Diagnostic Laboratory

Survey of bovine respiratory disease complex (BRDC) pathogens from clinical cases submitted to Kansas State Veterinary Diagnostic Laboratory (KSVDL) using a real-time PCR panel.

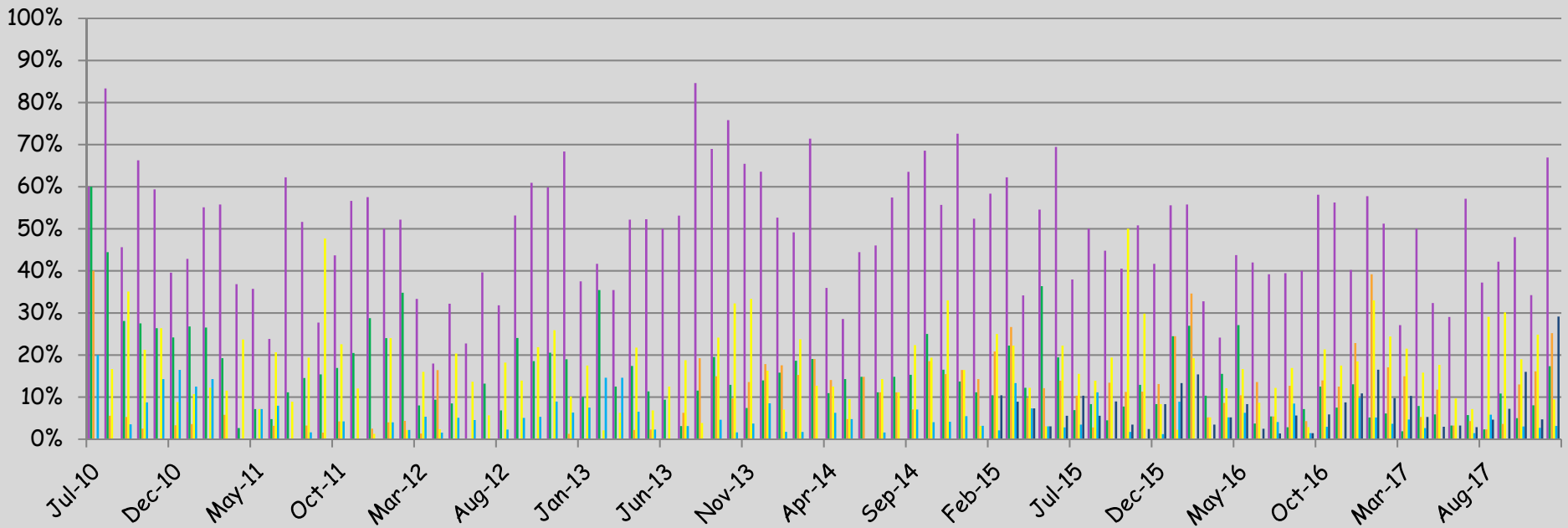
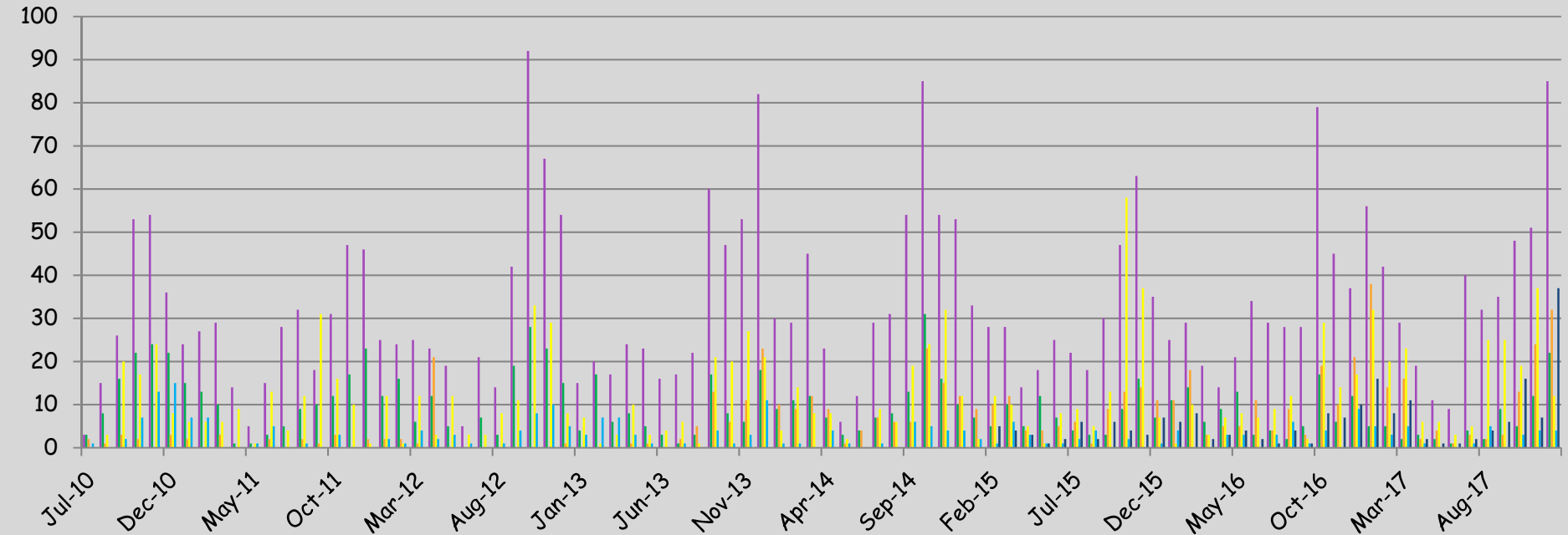
R. Hesse, J. Anderson, B. Meadors, J. Bai, E. Porter, L. Peddireddi, G. Anderson, and J. Henningson

Kansas State Veterinary Diagnostic Laboratory,  
College of Veterinary Medicine,  
Kansas State University

# BRD Screening—Agent by Month

\*data collected up to 12/31/2017

M. Bovis BVD BRSV BCV IBR IDV

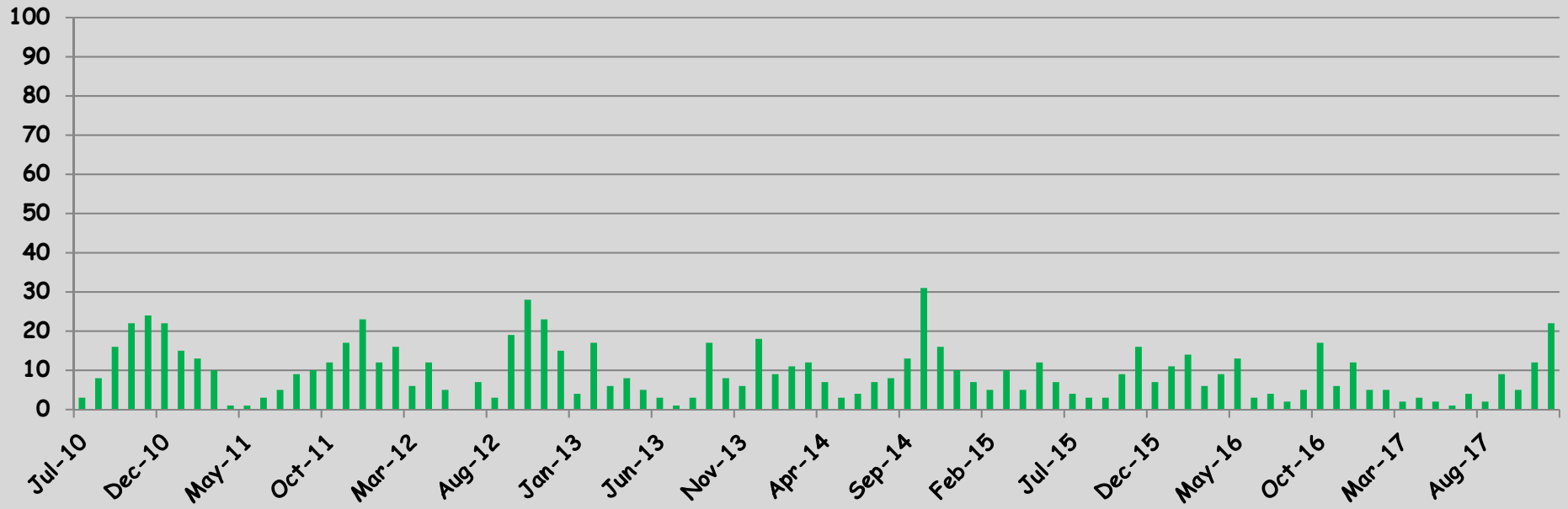


# Percent PCR Positive from 4,843 Clinical Samples Submitted to KSVDL

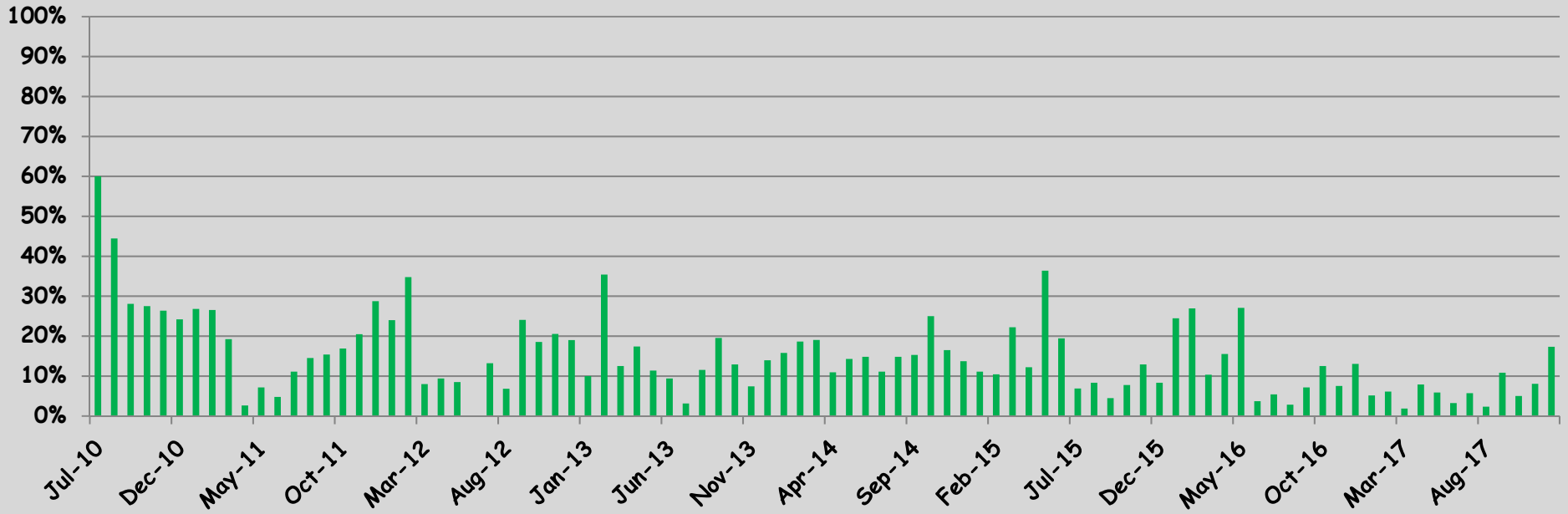
Sample type	M. Bovis	<b>BVD</b>	IBR	BoCV	BRSV	IDV
Tissue (3565)	59%	<b>21%</b>	3%	10%	12%	6%
Swab (2435)	36%	<b>5%</b>	6%	31%	7%	12%

\*IDV testing started 2/13/15. IDV % based on total samples since that date (1440 tissue/1117 swab)

# # PCR Positive for BVD



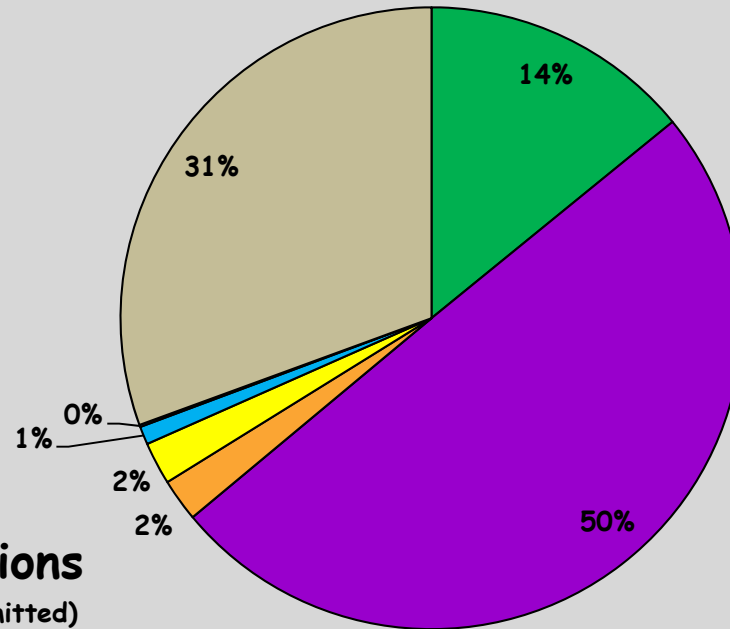
# % PCR Positive for BVD



- BVD Only
- w/M. Bovis
- w/BRSV
- w/BCV
- w/IBR
- w/IDV
- w/>1 other infection

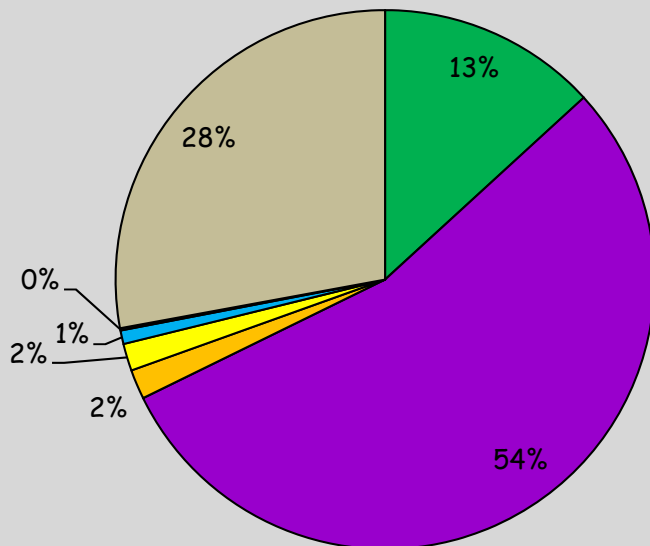
## BVD Infections

\*PI3 not included due to insufficient sample numbers



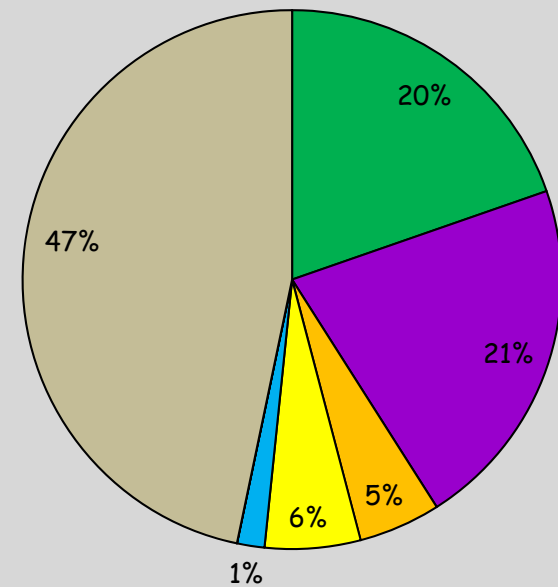
## BVD Tissue Infections

(736 total / 21% of tissues submitted)

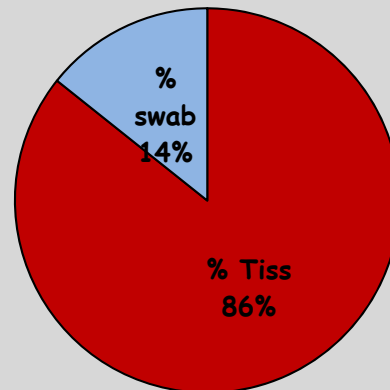


## BVD Swab Infections

(123 total / 5% of swabs submitted)



## BVD in:



# Virus Isolation Results

BVD+ 37% of VI BVD PCR+ Samples (17% of all VI samples)

- 242 from dead animals (78 cytopathic)
- 28 from swabs (6 cytopathic)

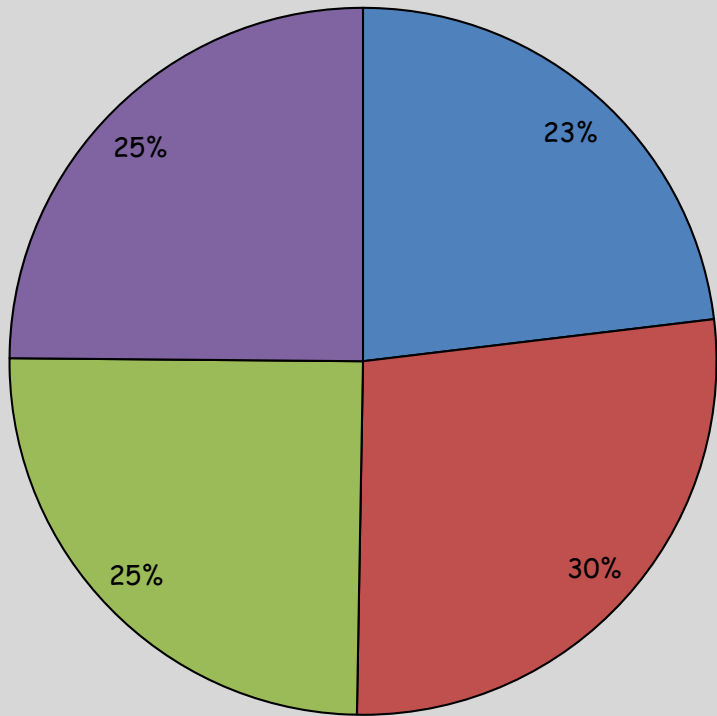
IBR+ 34% of VI IBR PCR+ Samples (5% of all VI samples)

- 38 from dead animals
- 38 from swabs

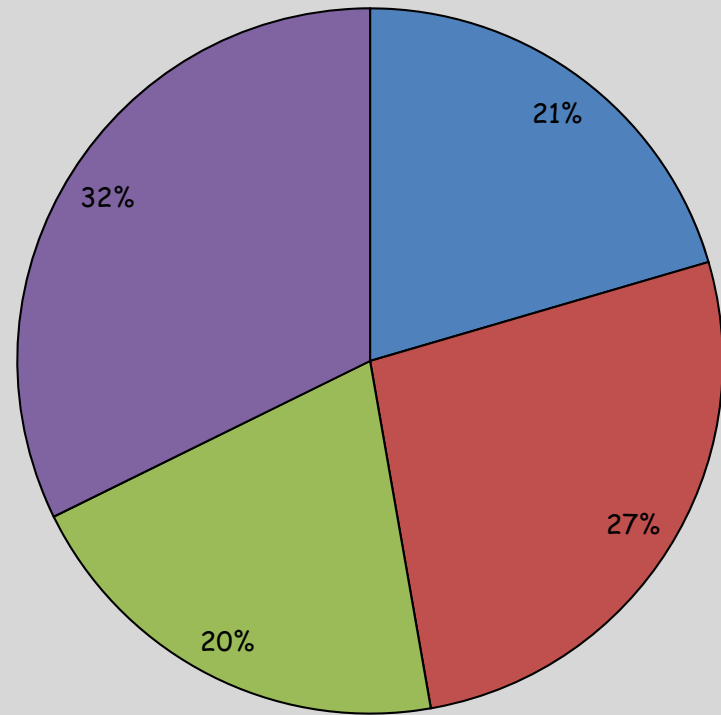
BCV+ 12% of VI BCV PCR+ Samples (5% of all VI samples)

- 16 from dead animals
- 66 from swabs

**BVD CT Range in Dead Animals  
(736 Samples)**



**BVD CT Range in Live Animals  
(127 Samples)**

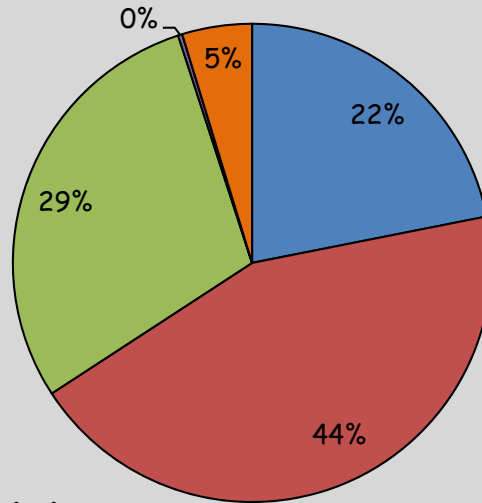


- 18-26
- 27-30
- 31-33
- 34-36

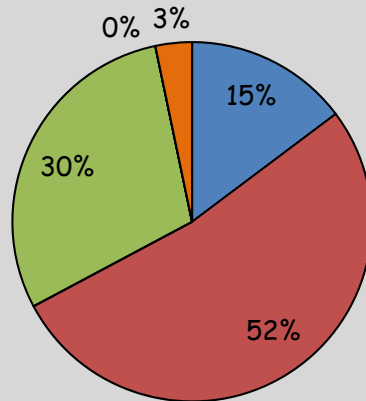


# BVD Genotype Breakdown

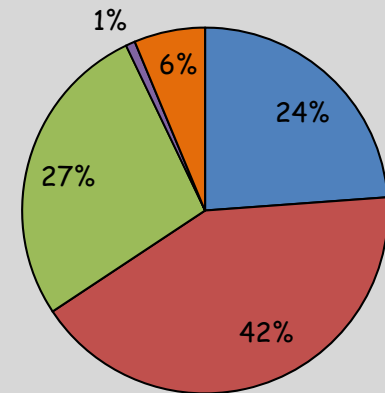
■ 1A ■ 2A ■ 1B ■ 2B ■ Undetermined



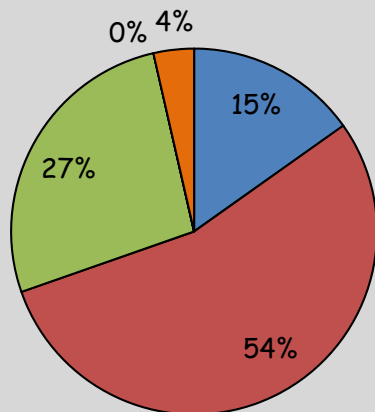
## Summer



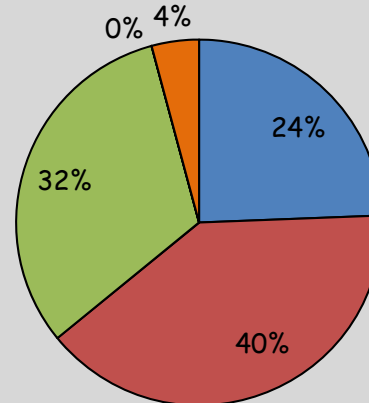
## Winter



## Spring



## Autumn

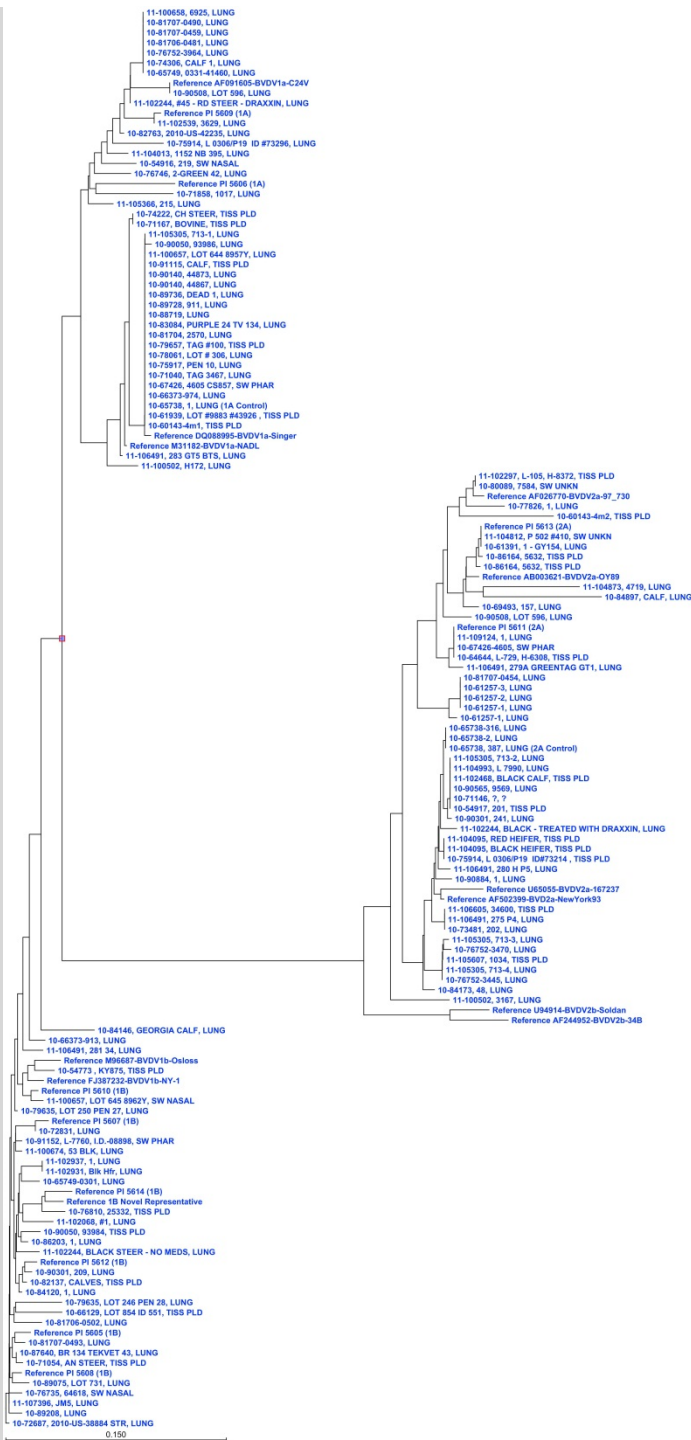


\*does not include non-amplified in total

BVD genotype 1a  
22%

BVD genotype 1b  
29%

\*does not include non-amplified in total



BVD genotype 2a  
44%

BVD genotype 2b  
0%

5% Unable to  
determine genotype

### Break down of Undetermined group:

		<b>messy:</b>	<b>15</b>
--	--	---------------	-----------

		<b>mixed:</b>	<b>7</b>
--	--	---------------	----------

		<b>messy/mixed:</b>	<b>10</b>
--	--	---------------------	-----------

		<b>Type 1, messy:</b>	<b>1</b>
--	--	-----------------------	----------

### Notes on other messy/mixed infections:

		<b>1A, messy:</b>	<b>2</b>
--	--	-------------------	----------

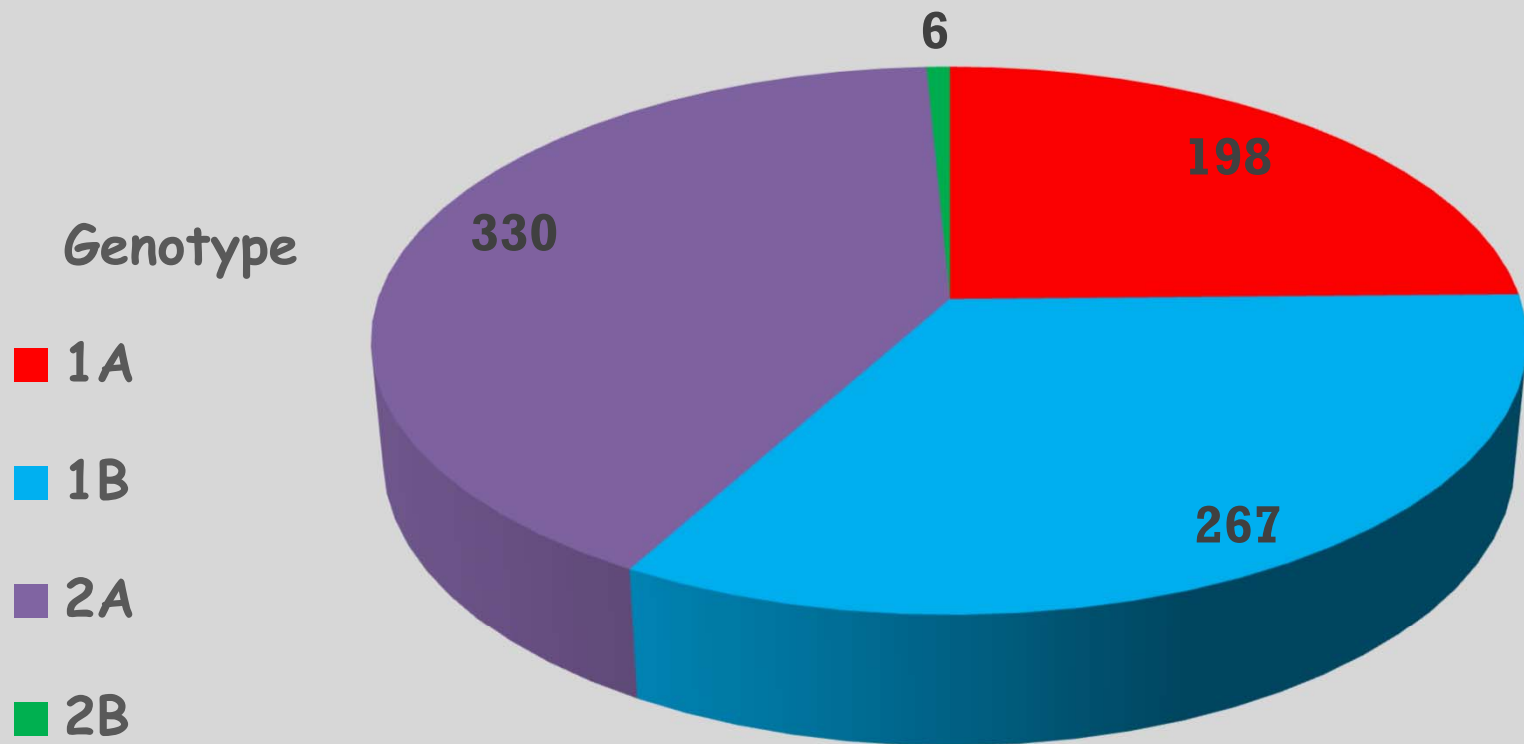
		<b>1B, messy:</b>	<b>4</b>
--	--	-------------------	----------

		<b>1B, mixed:</b>	<b>3</b>
--	--	-------------------	----------

		<b>2A, messy:</b>	<b>6</b>
--	--	-------------------	----------

		<b>2A, mixed:</b>	<b>15</b>
--	--	-------------------	-----------

# Accessioned BRD Cases BVD Genotype



# Accessioned BRD Cases with BVD Vaccine Genotype

