Sustainable Performance



Scottish PD Mapping Project

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Background to AQUAVAC Monitor

- Monitoring package developed with guidance from Marian McLoughlin prior to the launch of Norvax Compact PD
- Used in both Scotland and Ireland
- Aim to evaluate vaccine efficacy



Comprehensive field data dated back to 2008



AQUAVAC Monitor Support Package



Serology as a monitoring tool

- Serology used extensively by the industry as the main method of monitoring for PD.
 - Diagnosis is always supported by histology and PCR.
- Many companies will take weekly serology samples during pre-risk period for viral screening and biochemistry parameters
- Benefits of using serology
 - diagnostically informative
 - non-destructive/lethal sampling
 - more cost-effective for population monitoring





Interpretation of PD Monitoring

SAV Antibody Serum	SAV Virus Serum	SAV RT-PCR Serum	SAV RT-PCR Heart	Interpretation
-	+	+	+	Early SAV infection, no disease
+	+	+	+	Current infection
+	-	-	+	Mid to late infection
+	-	-	+*	Previous infection

*limitation as antibody signal will last longer than heart signal





Mapping Project - findings





Scottish PD Mapping Project

- Coverage of all regions, both vaccinated and unvaccinated populations
- Aims
- To assess prevalence of SAV
- Determine the subtype when the positive virus is identified
- Update geographical distribution of subtypes (regional subtype map)





Subtypes by region (Historical – 2018)





Subtypes by region (Historical – 2015)



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SAV 2

SAV 4

SAV 5

Subtypes by region (Historical – 2018)



Animal Health

Findings from project – West Coast of Scotland

- Western Isles
 - Both vaccinated and unvaccinated sites
 - Some clinical outbreaks
 - Antibody detection on vaccinated sites
 - SAV 1,4 and 5 detected in positive samples
- West Coast Mainland
 - Again, like the Western Isles, both vaccinated and unvaccinated sites
 - SAV 1,2,4 and 5 detected
 - Antibody positive and negative results resulted from vaccinated sites



Highlighting negative samples

- One company in particular on the West Coast Mainland has adopted a blanket vaccination approach since 2010
- Historical significant clinical PD outbreaks
- Recent sampling of a large number of sites has resulted in all negative
 - No antibody detected (at this point in time)
- Effect of blanket vaccination over time?

Current status in the Northern Isles

- Reduced amount of positives
- Evidence of reduction of viral load
- Virus kept at a level that is not causing issues/clinical disease
 - Effect of long-term blanket vaccination approach
 - Improved husbandry practices
 - Herd immunity

Reduction of positives in the Northern Isles

Sito			<u>Historical</u>							<u>2017</u>			
<u>site.</u>	PD +/-	Antibody:	Subtype:	Region:	Time point:	PD vacc:	<u>Site:</u>	PD +/-	Antibody:	Subtype:	Region:	Time point:	PD va
1	10%	20%	SAV 2	Orkney	November	Yes	1	neg	48%	n/a	Orkney	December	Yes
2	neg	60%	n/a	Orkney	November	Yes	2	neg	18%	n/a	Orkney	December	Yes
3	neg	95%	n/a	Orkney	November	Yes	3	neg	60%	n/a	Orkney	May	Yes
4	neg	10%	n/a	Orkney	September	Yes	4	neg	50%	n/a	Orkney	May	Yes
5	10%	20%	SAV 2	Orkney	September	Yes	5	neg	0%	n/a	Orkney	May	Yes
6	neg	0%	n/a	Orkney	August	Yes	6	neg	36%	n/a	Orkney	May	Yes
7	neg	45%	n/a	Shetland	August	Yes	7	neg	50%	n/a	Shetland	June	Yes
8	neg	25%	n/a	Shetland	August	Yes	8	neg	15%	n/a	Shetland	June	Yes
9	45%	0%	SAV 2	Shetland	August	Yes	9	neg	0%	n/a	Shetland	June	Yes
10	75%	37%	SAV 2	Shetland	July	Yes	10	neg	20%	n/a	Shetland	June	Yes
11	neg	25%	n/a	Shetland	August	Yes	11	neg	35%	n/a	Shetland	June	Yes

Public

Additional observations

- Concurrent SAV subtype infections on same site
- Site 1 SAV4 SAV1 (5 months)
- Site 2 SAV5 SAV1 (3 months)
- Site 3 SAV4 & 5 (0 months)
- Effect of intensity of sampling?
- Was this always the case?

Summary and conclusions

Reduction of positive results:

Effect of blanket vaccination over time?

Change in geographical distribution of subtypes:

- Biosecurity?
- ➡ Sea lice?

Increased well boat movements?

Concurrent infections:

- Effect of intensity of sampling?
- Was this always the case?

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Thank you

