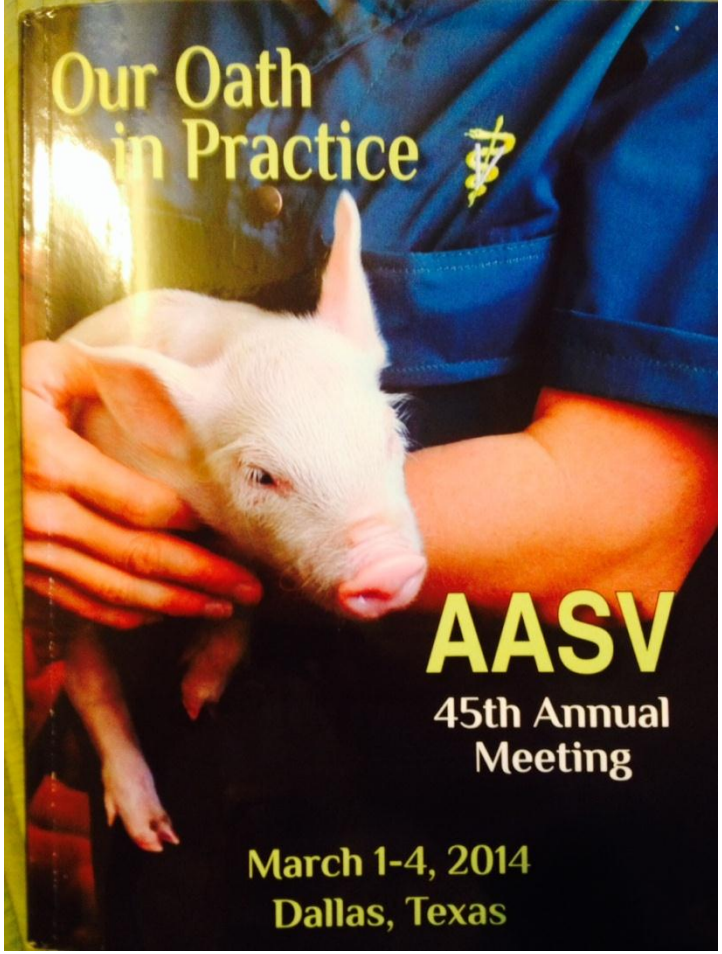

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GVS

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Differential diagnosis of PRRS infection and vaccination by one-step real-time RT-PCR

Jie Zhang[1], PhD; Kurt Rossow[2], DVM, PhD; Tracy Otterson[2], MS; Michael P. Murtaugh[2], PhD
[1]Lanzhou Veterinary Research Institute, Lanzhou, Gansu, People's Republic of China;
[2]University of Minnesota, St. Paul, Minnesota

- Programmi eradicazione/controllo basati su vaccinazione
  - Vicino all'esito finale c'e poco virus (sequenza difficile)
  - Virus vaccinale o virus selvaggio ?
  - Costi e tempi x una sequenziazione
- Sviluppata una TaqMan RT-PCR che identifica i ceppi vaccinali nell'ambito di un campione PCR +
- Il test non rileva la presenza contemporanea del virus vaccinale e di quello selvaggio

Pigs selected for increased feed efficiency are less affected by experimental infection with the PRRS virus

J. R. Dunkelberger[1], BA; N. J. Boddicker[2], PhD.; J. M. Young[1], PhD.; R. R. R. Rowland[3], Ph.D; J. C. M. Dekkers[1], PhD
[1]Department of Animal Science, Iowa State University, Ames, Iowa; [2]Genesus, Oakville, Manitoba, Canada; [3]College of Veterinary Medicine, Kansas State University, Manhattan, Kansas

- Tesi: suini con ICA più basso (minore ingestione) risentono di più di una infezione da virus PRRS
  - Minor energia disponibile per risposta immunitaria; è tutta utilizzata x produzione
  - Parametri misurati: IMG e Escrezione Virale
- Risultato:
  - IMG: suini a basso ICA risentono meno (non stat. sign.)
  - EV: nessuna differenza statistica

Infection with porcine reproductive and respiratory syndrome virus and *Streptococcus suis* changes the pharmacokinetics of ceftiofur hydrochloride in nursery pigs

Deanne Day[1], BS; Joel Sparks[1], BS; Johann Coetzee[2], BVSc, Cert CHP, PhD, DACVCP; Jianqiang Zhang[3], MD, MS, PhD; Joann Kinyon[3], MS; Joshua Ellingson[1], DVM, MS; Matthew Stock[2], DVM; Kenneth Stalder[4], MS, PhD; Locke Karriker[1], DVM, MS, Dipl. ACVPM; [1]Swine Medicine Education Center; [2]Pharmacology Analytical Support Team; [3]Veterinary Diagnostic Laboratory; [4]Department of Animal Science, Iowa State University, Ames, Iowa

- 2 gruppi > Ceftiofur 5mg/Kg > 0,10,20,40,60 min e 2,4,8,16,24,36,48 ore >curva concentrazione plasma
- Dopo 10gg: Prrsv – dopo altri 8gg Strept. suis tipo 2
- Quando 50% è ammalato: trattamento e cinetica
- Infez Prrs altera metabolismo farmaco: nel siero livelli inferiori alle MIC x S. suis tipo 2
- **> dosi massime e meglio i trattamenti ripetuti !**

Identification of risk factors for PRRSv infection in finishing sites with PRRSv negative placed pigs

Laura Carroll[1]; Jeremy Pittman[2], DVM, DABVP; Derald Holtkamp[3], DVM, MS
[1]North Carolina State University College of Veterinary Medicine, Raleigh, North Carolina
[2]Murphy-Brown, LLC – North Division, Waverly, Virginia
[3]Iowa State University College of Veterinary Medicine, Ames, Iowa

- Suini entrati Prrs negativi e non vaccinati, testati fluidi orali prima della prima vendita
  - Frequenza dei trasporti all'ingresso dei suini
  - Frequenza di consegne, servizi e visite al sito
  - Presenza di uccelli nell'allevamento
  - Numero di allevamenti entro 1600 mt di raggio
  - Stato sanitario del sito 1 più vicino
  - Ubicazione rispetto ad una strada importante

Identification of risk factors for PRRSv infection in finishing sites with PRRSv negative placed pigs

Laura Carroll[1]; Jeremy Pittman[2], DVM, DABVP; Derald Holtkamp[3], DVM, MS
[1]North Carolina State University College of Veterinary Medicine, Raleigh, North Carolina
[2]Murphy-Brown, LLC – North Division, Waverly, Virginia
[3]Iowa State University College of Veterinary Medicine, Ames, Iowa

Table 1: Finishing sites performance data.

Outcome	Negative sites	Positive sites	Difference	*P*-value
Count of lots	91	44	---	
Percent mortality	3.31	5.69	---	< 0.0001
Percent culls	2.75	2.66	---	0.7978
Days on feed	130.7	134.3	---	0.0510
End weight (lbs)	270.595	271.317	---	0.6829
ADG	1.872	1.830	---	0.2941
FC	2.417	2.549	---	0.0070
Medication cost per head sold	---	---	$0.697	< 0.0001
Total cost per head sold	---	---	$5.033	0.0057

Table 2: Wean to finish sites performance data

Outcome	Negative sites	Positive sites	Difference	*P*-value
Count of lots	11	15	---	
Percent mortality	5.95	7.16	---	0.2400
Percent culls	3.55	6.31	---	< 0.0001
Days on feed	170.5	176.3	---	0.0002
End weight (lbs)	252.057	247.541	---	0.2742
ADG	1.466	1.386	---	0.0052
FC	2.441	2.450		0.8465
Medication cost per head sold	---	---	$0.363	0.2534
Total cost per head sold	---	---	$2.428	0.3894

Potential environmental contamination of porcine reproductive and respiratory syndrome virus (PRRSV) from livehaul vehicles

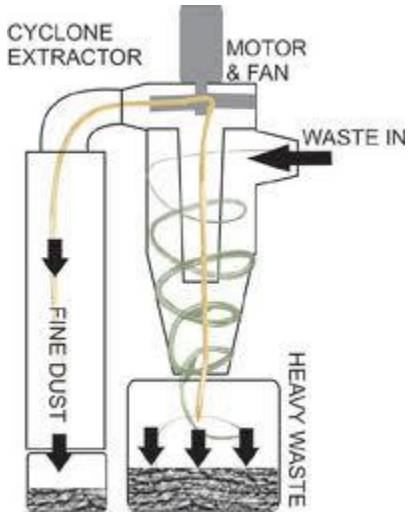
Alexander S. Hintz[1]; Jeremy Pittman[2], DVM
[1]University of Wisconsin School of Veterinary Medicine; [2]Murphy-Brown LLC

- Vaccino ricostituito sprayzzato da motrice a rimorchio; fatto tampone in 9 punti del rimorchio
  - Da fermo: 9 punti su 9 positivi
  - In movimento a 20-25 Km/h: 8 su 9 positivi
- Suini Prrs pos (6-25 Kg), trasporti reali (15min-2h)
  - 0 tamponi su 63 positivi
  - 1 su 20 campioni di aria positivi

➢ **Dipende dalla entità della viremia !**

➢ **Suini grassi muovono più aria ?!**

Ciclonic air collector



Evaluation of swine transport vehicle decontamination practices

Justin Kuecker; John Kolb, DVM; Arturo Oropeza-Munoz, MVZ, MS

- 10 camion – 7 tamponi (in 4 punti interni e 3 esterni)
- Contaminati con 2 ml x punto di MLV PRRS e BCV
- Lavati a caldo e disinfettati, poi ri-tamponati
- 5 camion ri-contaminati e asciugati a caldo, quindi ri-tamponati
- Ognuno dei 2 metodi da solo non basta !

Table 1: Number of positive samples following various stages of sanitation.

	Positive samples			
	Post washing		Post drying	
Spike agent (prewash/predry)	PRRSV	BCV	PRRSV	BCV
PRRSv/NA	1/3	0/2	1/3	0/3
PRRSv/PRRSv	2/2	0/2	2/2	0/2
BCV/NA	0/2	0/2	0/2	0/2
BCV/PRRSv	1/3	3/3	3/3	3/3

The evaluation of PRRSv transfer via tattooing in the suckling piglet

Chad O'Connor[1], BS; Joe Connor[2], DVM, MS; Dyneah Classen[2], DVM; Laura Greiner[2], PhD
[1]College of Veterinary Medicine, University of Illinois, Urbana-Champaign, Illinois;
[2]Carthage Veterinary Service, Carthage, Illinois

INVESTIGATION OF THE SPREAD OF PRRS VIRUS BETWEEN SWINE HERDS PARTICIPATING IN AN ARC&E PROJECT IN ONTARIO USING MOLECULAR AND NETWORK DATA

AG Arruda[1], R Friendship[1], J Carpenter[2], K Hand[3], D Ojkic[4], Z Poljak[1]
[1]Department of Population Medicine, University of Guelph, Guelph, ON, Canada, [2]Ontario Swine Health Advisory Board, Stratford, ON, Canada, [3]Strategic Solutions Group, Puslinch, ON, Canada, [4]Animal Health Laboratory, University of Guelph, Guelph, ON, Canada

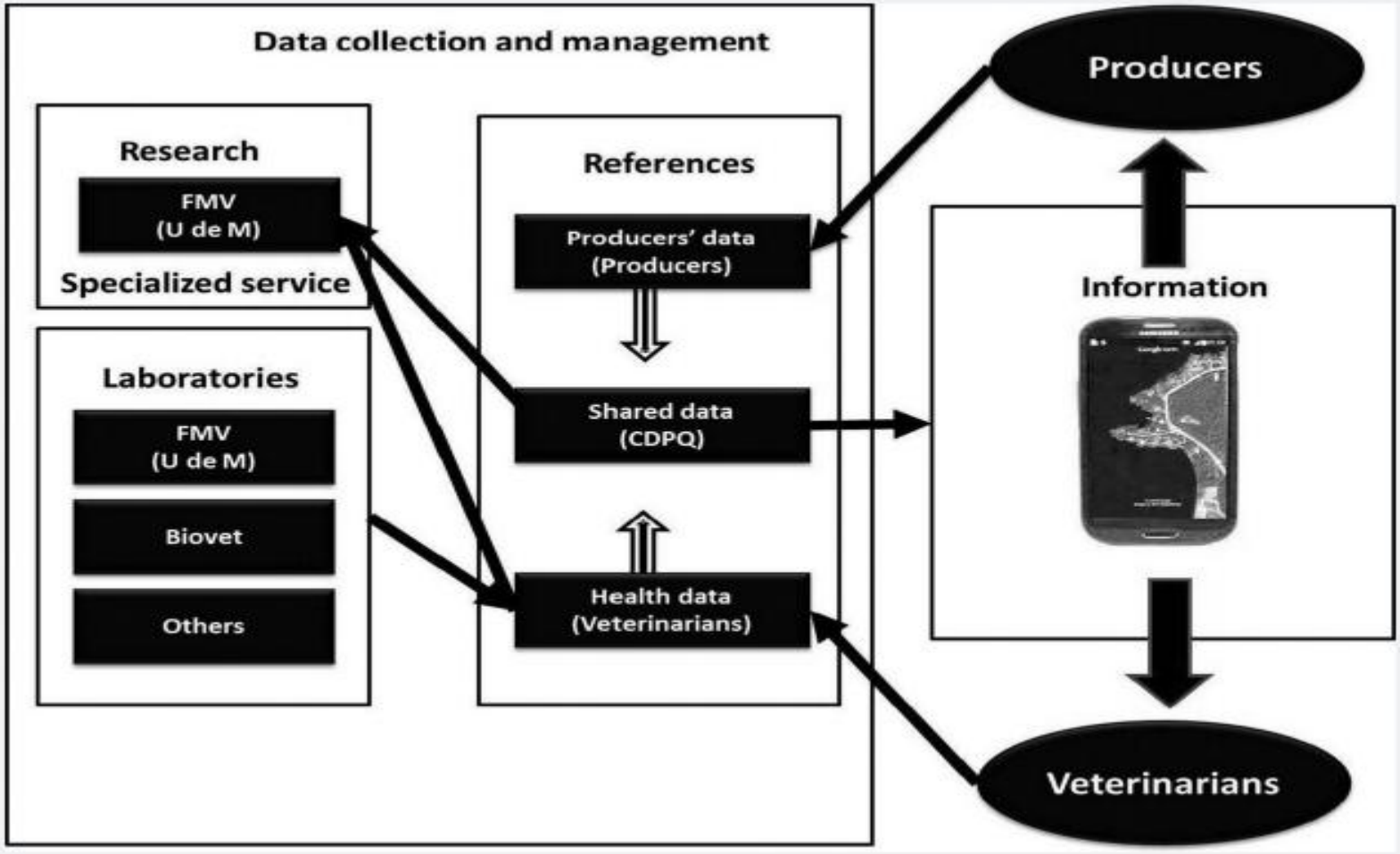
PRRS CASE STUDY: IS IT THE RESIDENT VIRUS OR IS IT A NEW INTRODUCTION?

N. Garbes[1], C. Pollard[1] and E. Johnson[2]
[1]Bethany Swine Health Services, Sycamore, IL, [2]Boehringer Ingelheim Vetmedica, Inc, St. Joseph, MO

Collaborative information system for PRRS management: From farm to cell phones

Christian Klopfenstein[1], DVM, PhD; Lilly Urizar[1], DVM; Valérie Dufour[1], MS;
Robert Doré[1]; Joël Rivest[1], PhD
[1]Centre de développement du porc du Québec inc. (CDPQ)

Figure 1: Data collection and management.



Modified live PRRSV vaccination is efficacious following challenge with eight genetically diverse PRRSV isolates

A. Patterson, J. Victoria, D. Jordan, E. Vaughn, M. Roof, R. Philips
Boehringer Ingelheim Vetmedica Inc., St. Joseph, Missouri

- Suinetti vaccinati a 3 settimane di età
- Challenge a 21 – 28 gg post vaccinazione
- Eutanasia 14 gg post challenge
- Omologia ORF 5: 86-91% (ATP) e 86-100%
- Differenza statisticamente significativa nelle lesioni polmonari in ognuna delle prove

Poster 85

Reduction of wild-type PRRS virus shedding in aerosol of growing pigs by modified-live virus vaccination at weaning

Scott Dee[1]; Joel Nerem[1]; Thomas Wetzell[2]; Jean Paul Cano[2]; Justin Rustvold[2]
[1]Pipestone Applied Research, Pipestone, Minnesota;
[2]Boehringer Ingelheim Vetmedica Inc, St. Joseph, Missouri

- 2100 suini Prrs neg. divisi in 2 stanze (vacc. e cont.)
- Vaccinati a 4 settimane di età
- Infettati x via IM dopo 4 settimane il 10% dei capi
- PCR e Elisa no differenze tra i 2 gruppi

Table 1: Detection of PRRSV in air by PCR and barn performance by treatment

Parameter (days)	NVC	MLV
Frequency post-vaccination	0/2[a]	5/28[b]
Duration post-vaccination	0	6
Frequency post-inoculation	21/118[b]	4/118[a]
Duration post-inoculation	36	6
Mortality, %	4.8	5.1
Cull rate, %	5.9	2.8
ADG, kg	0.712	0.739
Feed conversion	2.38	2.40

Rows with different superscripts differ, $P < 0.05$

Poster 95

Safety, efficacy, and duration of immunity of a PRRSv MLV vaccine in 1 day-of-age pigs

Brett O'Brien[1], VMD, MS; Marcia L. Keith[2], BS; Terry L. Martin[2], MBA; Nathalie C. Martinon[2], DVM; Paul L. Runnels[2], BA, DVM, PhD; Jay G. Calvert[2], PhD; Douglas S. Pearce[2], BS; Lucas P. Taylor[2], MS; Robert G. Ankenbauer[2], PhD
[1]Zoetis, Mankato, Minnesota; [2]Zoetis, Kalamazoo, Michigan

- Gruppo Trattato/Controllo: vaccinati a 1 gg di vita
  - Sicurezza: no diff. Cliniche. Challenge a 7 settimane e riduzione lesioni polmonari del 90% (eutanasia 10gg pc)
  - Efficacia: Challenge a 7 settimane e riduzione lesioni polmonari del 98% (eutanasia 10gg post challenge)
  - Misurata Durata Immunità a 18 e 26 sett con challenge ed eutanasia 10 gg dopo
  - Lesioni polmonari ridotte 95% e 93% rispettivamente

CASE STUDY OF A GILT DEVELOPMENT ACCLIMATIZATION PROTOCOL IN A PRRS CONTROL PROGRAM AND IMPACT ON BREEDING HERD STABILITY IN A U.S. PRODUCTION SYSTEM

E Diaz, A Oropeza, J Kolb, R Philips, M White
Boehringer Ingelheim Vetmedica Inc., Saint Joseph, MO

- 26.000 scrofe in 12 allevamenti + GDU + Siti 2
- Chiusura allevamento x 210 gg
  - Scrofe: 2 LVI a 28gg dis.; dopo 30gg: 2 MLV a 30gg dis.
  - Scrofette: 2 LVI a 21gg dis.; 2 MLV a 28gg dis.
  - Protocollo completo 40gg prima dell'ingresso in GDU
  - GDU flusso continuo riceve scrofette 70-98gg post LVI
- Dopo 2 anni di protocollo virus residente ancora lì !
- Scrofette non devono essere spostate prima di 120gg post LVI

FREQUENCY OF ABORTIONS PER WEEK AS INDICATOR OF PRRSV INFECTION

DCL Linhares[1], RB Morrison[2]. [1]*Agroceres PIC, Rio Claro-SP, Brazil,* [2] *U. Minnesota, St Paul, MN, USA*

- 52 allevamenti sottoposti a LCE con LVI o MLV
- Numero aborti settimanali 21 sett. pre e 2 sett. post scoperta del virus, prima della esposizione al virus selvaggio
- 80,8% degli allevamenti aveva un numero di aborti significativamente superiore dopo rilevamento virus

Table 1 - Median abortions per 1000 sows, before and after PRRSv detection

	LVI	MLV	Wilcoxon p-value
Before	0.706	0.568	0.3744
After*	7.310	6.199	0.3177

*After PRRSv detection, before whole-herd exposure to LVI or MLV.

FREQUENCY OF PRRSV DETECTION BY PCR IN THE LAST POSITIVE TEST BEFORE HERD WAS CONSIDERED STABLE

DCL Linhares[1], RB Morrison[2]. [1]*Agroceres PIC, Rio Claro-SP, Brazil,* [2] *U. Minnesota, St Paul, MN, USA*

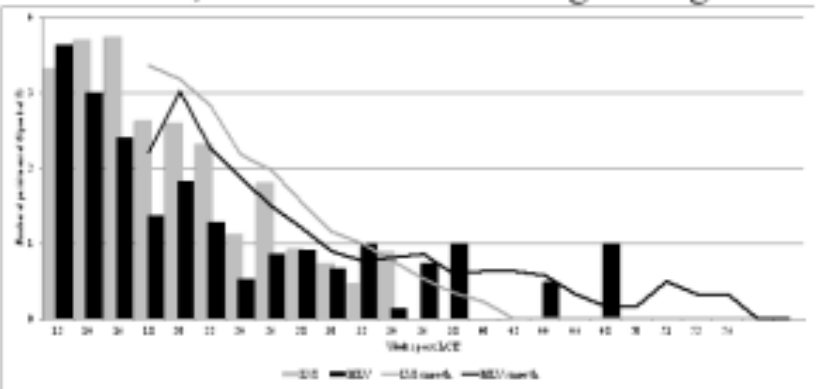
- 53 allevamenti sottoposti a LCE: 33 LVI e 20 MLV
- 30 suini - 6 pool ogni 30 gg - inizio 12 sett post LCE
- Obiettivo: 4 test neg. > allevamento PRRS stabile
- A fine protocollo la prevalenza è bassa

> aumentare il campionamento a fine protocollo

Table 1 - Frequency of positive pools in the last sampling that yielded at least 1 positive pool.

Group	Number (Pct) of positive pools out of 6 pools tested		
	1 or 2 positive	3 or 4 positive	5 or 6 positive
LVI	6 (18.2%)	15 (45.5%)	12 (36.4%)
MLV	9 (45.0%)	10 (50.0%)	1 (5.0%)

Figure 1 – Bar graph depicting number of PCR-positive pools (by RT-PCR) over time on LVI and MLV herds, with 4 months-moving average lines.



Influenza A virus infection and diversity in commercial pig herds

A Diaz; S. Enomoto; C. Corzo; M. Culhane; S. Sreevatsan; M. Torremorell
Department of Veterinary Population Medicine, College of Veterinary Medicine, University of Minnesota, St. Paul, Minnesota

- Il virus all'interno di una popolazione endemicamente infetta è dinamico nell'ambito di una subpopolazione e tra subpopolazioni
- Il virus può essere mantenuto per un periodo di tempo molto lungo con una prevalenza molto bassa in svezzamento ingrasso
- Scrofette: fonte di un nuovo virus o reservoir del virus residente nel sito 1
- Suini lattanti possono essere reservoir e/o diffusori del virus a un'altra popolazione suina

Influenza A virus infection and diversity in commercial pig herds

A Diaz; S. Enomoto; C. Corzo; M. Culhane; S. Sreevatsan; M. Torremorell
Department of Veterinary Population Medicine, College of Veterinary Medicine, University of Minnesota, St. Paul, Minnesota

- Tutte queste popolazioni (suinetti/scrofette/scrofe) possono rappresentare un miscelatore all'interno del quale i virus influenzali si mescolano: la analisi filogenetica può aiutare a capire la direzione di trasmissione del virus nel tempo tra le subpopolazioni
- Pensiamo che la persistenza nella popolazione sia il risultato dell'adattamento del virus come conseguenza della trasmissione da suino a suino e della diversità nei livelli e nel tipo di immunità

Maternally derived antibodies induce vaccine-associated enhanced respiratory disease in weaned pigs challenged with heterologous virus

Daniela Rajao[1], DVM, PhD; Amy Vincent[1], DVM, PhD; Crystal Loving[1], PhD;
Phillip Gauger[2], DVM, PhD; Matthew Sandbulte[2], PhD; Pravina Kitikoon[1], DVM, PhD
[1]National Animal Disease Center/USDA/ARS, Ames, Iowa; [2]Iowa State University, Ames, Iowa

- Un virus > 2 vaccini (Inattivato e Vivo Attenuato)
- 3 vaccinazioni a scrofe positive post-pandemia 2009
- 19 suini di 2 settimane con MDA (divisi 8 – 8 – 3)
- 19 suini SPF x IAV come controllo no MDA (8-8-3)
- Svezzati a 2 settimane e infettati 1 settimana dopo
- 2 giorni post-infez introdotti 5 suini SPF x gruppo
- Controllo giornaliero, eutanasia 5 gg post infezione x i suini infettati e 15 gg post contatto i suini SPF

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Phillip Gauger[2], DVM, PhD; Matthew Sandbulte[2], PhD; Pravina Kitikoon[1], DVM, PhD
[1]National Animal Disease Center/USDA/ARS, Ames, Iowa; [2]Iowa State University, Ames, Iowa

Homologous challenge groups	Macroscopic scores (0-100)	Microscopic scores (0-22)	Trachea histopathology (0-8)
No MDA/NC	0.4 ± 0.1^{a}	1.3 ± 0.1^{a}	0.1 ± 0.1^{a}
No MDA/H1N1	24.6 ± 2.3^{b}	15.2 ± 0.6^{b}	$1.7 \pm 0.3^{b,c}$
MDA-WIV/H1N1	$0.7 \pm 0.4^{a,c}$	5.3 ± 0.1^{c}	$0.8 \pm 0.6^{a,b}$
MDA-LAIV/H1N1	8.2 ± 1.8^{c}	10.4 ± 0.9^{d}	2.4 ± 0.2^{c}

^{a,b,c} Statistically significant differences identified with different lowercase letters ($P \leq 0.05$).

Homologous challenge groups	Viral titers (nasal swabs)[x]					Viral titers (BALF)[x]
	1 dpi	2 dpi	3 dpi	4 dpi	5 dpi	5 dpi
No MDA/NC	0.0 ± 0.0^{a}	0.0 ± 0.0^{a}	0.0 ± 0.0^{a}	0.0 ± 0.0^{a}	0.0 ± 0.0^{a}	0.0 ± 0.0^{a}
No MDA/H1N1	1.2 ± 0.3^{b}	1.1 ± 0.2^{b}	1.7 ± 0.3^{b}	2.3 ± 0.2^{b}	1.0 ± 0.2^{b}	4.2 ± 0.3^{b}
MDA-WIV/H1N1	0.0 ± 0.0^{a}	0.1 ± 0.1^{a}	0.0 ± 0.0^{a}	0.1 ± 0.1^{a}	0.1 ± 0.1^{a}	0.0 ± 0.0^{a}
MDA-LAIV/H1N1	0.0 ± 0.0^{a}	$0.6 \pm 0.3^{a,b}$	0.6 ± 0.4^{a}	0.7 ± 0.3^{a}	$0.4 \pm 0.1^{a,b}$	3.6 ± 0.5^{b}

[x] Virus titers represented as log10 TCID50/ml.

^{a,b,c} Statistically significant differences identified with different lowercase letters ($P \leq 0.05$).

Suini SPF/contatto: nessuno si è infettato tra i WIV; tutti i LAIV

Maternally derived antibodies induce vaccine-associated enhanced respiratory disease in weaned pigs challenged with heterologous virus

Daniela Rajao[1], DVM, PhD; Amy Vincent[1], DVM, PhD; Crystal Loving[1], PhD;
Phillip Gauger[2], DVM, PhD; Matthew Sandbulte[2], PhD; Pravina Kitikoon[1], DVM, PhD
[1]National Animal Disease Center/USDA/ARS, Ames, Iowa; [2]Iowa State University, Ames, Iowa

Heterologous challenge groups	Macroscopic scores (0-100)	Microscopic scores (0-22)	Trachea histopathology (0-8)
No MDA/NC	0.4 ± 0.1^{a}	1.3 ± 0.1^{a}	0.1 ± 0.1^{a}
No MDA/H1N2	15.2 ± 2.0^{b}	13.4 ± 0.7^{b}	3.1 ± 0.5^{b}
MDA-WIV/H1N2	28.9 ± 8.1^{c}	13.4 ± 1.0^{b}	3.0 ± 0.6^{b}
MDA-LAIV/H1N2	$17.6 \pm 2.0^{b,c}$	12.0 ± 0.8^{b}	2.3 ± 0.4^{b}

^{a,b,c,d} Statistically significant differences identified with different lowercase letters ($P \leq 0.05$).

Heterologous challenge groups	Viral titers (nasal swabs)[x]					Viral titers (BALF)[x]
	1 dpi	2 dpi	3 dpi	4 dpi	5 dpi	5 dpi
No MDA/NC	0.0 ± 0.0^{a}	0.0 ± 0.0^{a}	0.0 ± 0.0^{a}	0.0 ± 0.0^{a}	0.0 ± 0.0^{a}	0.0 ± 0.0^{a}
No MDA/H1N2	2.8 ± 0.3^{b}	2.6 ± 0.2^{b}	3.3 ± 0.3^{b}	3.1 ± 0.2^{b}	3.0 ± 0.2^{b}	5.2 ± 0.3^{b}
MDA-WIV/H1N2	2.5 ± 0.6^{b}	2.1 ± 0.4^{b}	3.0 ± 0.3^{b}	2.9 ± 0.3^{b}	1.6 ± 0.4^{c}	$6.0 \pm 0.2^{b,c}$
MDA-LAIV/H1N2	2.8 ± 0.4^{b}	2.6 ± 0.5^{b}	3.0 ± 0.2^{b}	2.7 ± 0.3^{b}	$2.8 \pm 0.4^{b,c}$	6.8 ± 0.3^{c}

[x] Virus titers represented as log10 TCID50/ml.

^{a,b,c} Statistically significant differences identified with different lowercase letters ($P \leq 0.05$).

Tutti i suini messi a contatto si sono infettati

A commercial PCV2a vaccine and an experimental PCV2b vaccine both protect against challenge with a 2013 variant mPCV2b

Tanja Opriessnig[1,2], Dr med vet, PhD; Priscilla Gerber[1], DVM, PhD; Chao-Ting Xiao[1], PhD; Patrick Halbur[1], DVM, MS, PhD
[1]Department of Veterinary Diagnostic and Production Animal Medicine, Iowa State University, Ames, Iowa; [2]The Roslin Institute and The Royal (Dick) School of Veterinary Studies, University of Edinburgh, Midlothian, UK

A single dose, PCV2a based ORF2 subunit vaccine cross-protects against challenge with a recent PCV2b strain

Greg Haiwick; Marc Eichmeyer; Brian Payne
Boehringer Ingelheim Vetmedica, Inc., St. Joseph, Missouri

Field comparison of PCV2 vaccines: A retrospective production data analysis

Brad Thacker[1], DVM, PhD, DABVP; Robert Blomme[2], DVM; Derald Holtkamp[3], DVM, MS; Jack Creel[1], DVM
[1]Merck Animal Health, DeSoto, Kansas; [2]AMVC Veterinary Services, Audubon, Iowa; [3]Iowa State University, Ames, Iowa

Update on *Mycoplasma* research

Maria J. Clavijo[1], DVM; Rodger Main[2], DVM, PhD; Maria Pieters[1], DVM, PhD;
Douglas Marthaler[1]; Albert Rovira[1], DVM, MS, PhD
[1]University of Minnesota, St. Paul, Minnesota; [2]Iowa State University, Ames, Iowa

Table 1: Currently available diagnostic tools for swine mycoplasmas

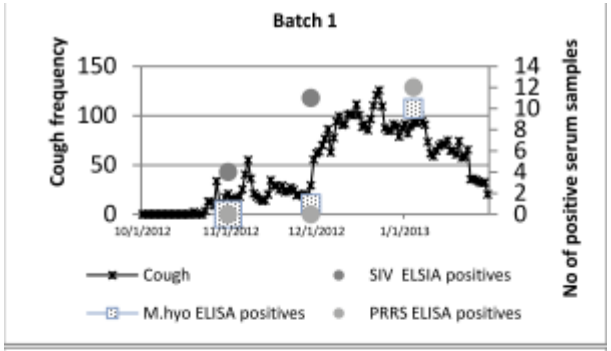
Agent	Diagnostic tools	Sample type	Purpose/timing of sampling	Interpretation of results	Observations
M. hyopneumoniae	ELISA	Serum	Assessing the status of unknown populations and surveillance of negative populations	- Indicates previous exposure - Serology profiles are not correlated with protection	- Some pigs may take 3-4 weeks to seroconvert - False positives reported
	qPCR	a. Nasal, oropharyngeal, tracheal and laryngeal swab b. Tracheal-bronchial lavage c. Bronchial swabs d. Oral fluids	a-b. Introduction of animals, estimating prevalence at weaning and surveillance c. Diagnosis of disease	a-b. Prevalence of infected pigs. Does not imply disease c. Lung with lesions- Diagnosis of disease	d. Low sensitivity in oral fluids unless there are marked clinical signs.
	IHC	Lung	Diagnosis of disease	Lung with lesions- Diagnosis of disease	
	Culture	Frozen lung	Obtaining an isolate for vaccine purposes and MLST analysis		Time consuming. Less than 25% success rate
	Histopathology	Lung	Diagnosis of disease	Diagnosis of disease when combined with other tests (i.e. PCR)	

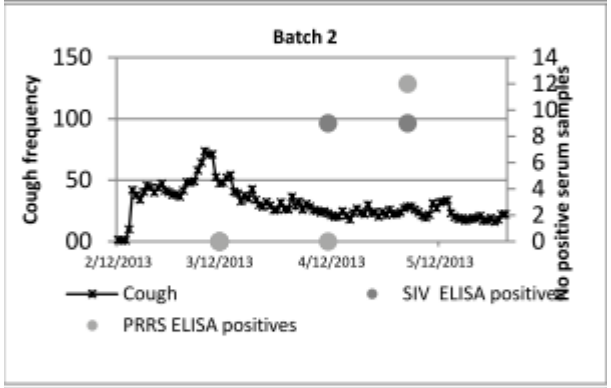
Novel approach for monitoring respiratory diseases in fattening pigs

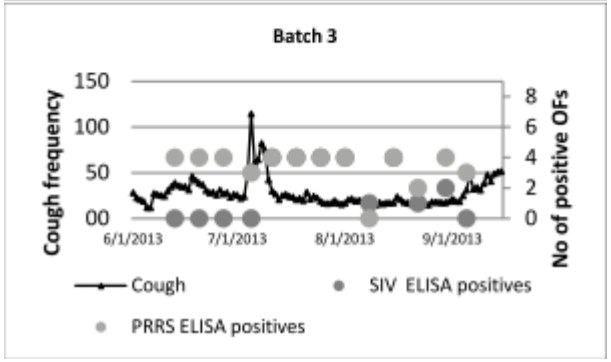
Marika Genzow[1], C.O.Duran[1], K.Strutzberg-Minder[2], Gudrun Finger[3] and M.Hemeryck[4]

[1] *Boehringer Ingelheim, Ingelheim, Germany,* [2] *IVD, Hanover, Germany,* [3] *Tierärztliche Praxis Lindhaus, Schöppingen, Germany,* [4] *Soundtalks NV, Leuven, Belgium,,* marika.genzow@boehringer-ingelheim.com

- 100 suini in 4 box x trial
- 1 microfono x box x 4 mesi
- Prrs, Influenza, M Hyo pos.
- Sieroconversione x Influenza a metà ciclo
- Sieroconversione x Prrs a fine ciclo
- 1 gruppo sieroconversione x Mhyo a 17 sett. > TOSSE ++







Management of *Mycoplasma hyosynoviae*

Cameron Schmitt, DVM, MS

Clinical management of *Mycoplasma hyorhinis*

Deborah Murray, DVM

Mycoplasma suis: Strategies for control

Megan Potter, DVM, PhD; Steve Henry, DVM, Diplomate ABVP;
Lisa Tokach, DVM, Diplomate ABVP
Abilene Animal Hospital, P.A., Abilene, Kansas

Update on *Mycoplasma* research

Maria J. Clavijo[1], DVM; Rodger Main[2], DVM, PhD; Maria Pieters[1], DVM, PhD;
Douglas Marthaler[1]; Albert Rovira[1], DVM, MS, PhD
[1]University of Minnesota, St. Paul, Minnesota; [2]Iowa State University, Ames, Iowa

	Serology	Serum	Evaluating the immunity of the herd, evaluating when maternal antibodies decay	Indicates previous exposure	Experimental stage. Not commercially available
M. hyorhinis	qPCR	a. Nasal swabs b. Lung c. Oral fluids d. Tissues - Serosal surfaces	a-c. Estimating prevalence and timing of colonization d. Diagnosis of disease	a-c. Indicates colonization and not disease d. Positive sample indicates disease	b. Role of *M. hyorhinis* in pneumonia is not clear
	Culture	a. Nasal swabs b. Lung c. Serosal surfaces	c. Disease diagnosis. Obtaining an isolate for vaccine purposes and MLST analysis	a-b. Indicates colonization c. Diagnosis of disease	Isolation from nasal cavity is tedious and time consuming.
	Serology	Serum	Evaluating the immunity of the herd, evaluating when maternal antibodies decay	Indicates previous exposure	Experimental stage. Not commercially available
M. hyosynoviae	qPCR	a. Tracheal and oropharyngeal swabs b. Joint fluid and tissue	a. Estimating prevalence and timing of colonization after weaning. Evaluating status of incoming gilts b. Diagnosis of disease	a-c. Indicates colonization and not disease d. Positive sample indicates disease	b. Ideally submit entire limb
	Culture	a. Tracheal and nasal swabs b. Joint fluid and tissue	Isolate required for vaccine purposes and antibiotic susceptibility	a-b. Indicates colonization c. Diagnosis of disease	a. Tedious and time consuming b. Ideally submit entire limb
	Blood smears	Whole blood (EDTA or heparin)	Staining of RBCs for pathogen detection	Diagnosis of disease	Not very sensitive. Will miss intracellular strains
M. suis	qPCR and	a. Whole blood (EDTA or heparin) b. Liver or spleen	a-b. Detection of the pathogen	Diagnosis of disease	

Comparative detection of *Lawsonia intracellularis*, *Salmonella* and *Brachyspira* from oral fluids and feces

Timothy Frana, DVM, MPH, PhD; Hallie Warneke, BS; Wendy Stensland, BS; Joann Kinyon, BS, MS; Leslie Bower, MS; Eric Burrough, DVM, PhD
Iowa State University, Ames, Iowa

		Pen fecal samples		
		Positive	**Negative**	**Total**
Oral fluid samples	Positive	3	7	10
	Negative	0	10	10
	Total	3	17	20

Table 2: *Salmonella* culture and qPCR results.

	Culture				**PCR**			
	Individual feces		**Oral fluids**		**Pen feces**		**Oral fluids**	
	TET	**BPW/RV**	**TET**	**BPW/RV**	**Direct**	**TET**	**Direct**	**TET**
No. of samples	0	0	0	1	0	0	6	4

Table 3: *Brachyspira hyodysenteriae* culture and qPCR results.

Sample ID	**11**	**12**	**13**	**14**	**15**
Individual fecal culture	1/5	2/5	2/5	3/5	0/5
Oral fluid culture	-	-	-	-	+
Pen fecal qPCR	-	-	+	+	-
Oral fluid qPCR	+	+	+	+	+

Table 4: *Brachyspira murdochii* culture and qPCR results.

Sample ID	**3**	**4**	**6**	**7**	**9**	**8**	**10**	**13**	**14**	**15**
Individual fecal culture	2/5	5/5	1/5	4/5	0/5	0/5	2/5	2/5	0/5	0/5
Oral fluid culture	-	-	-	+	-	-	-	-	+	-
Pen fecal qPCR	-	-	-	+	-	-	-	-	-	-
Oral fluid qPCR	-	-	+	+	+	+	-	-	+	+

Evaluation of autogenous inactivated vaccines to control swine dysentery – a pilot study

F A Vannucci, R Souza, M R Henriques, K C P Reis, L E M Bouillet, W Guimaraes, D L Santos, L F Santos, J L Santos
Microvet – Microbiologia Veterinária Especial, Viçosa, MG, Brazil, fvannucci@microvet.com.br

- 24 suini divisi in 4 gruppi
- Vaccinati a 21 e 42 gg; 2 diversi adiuvanti
- Infettati 2 settimane dopo
- "Diarrea score" e IMG a favore dei vaccinati

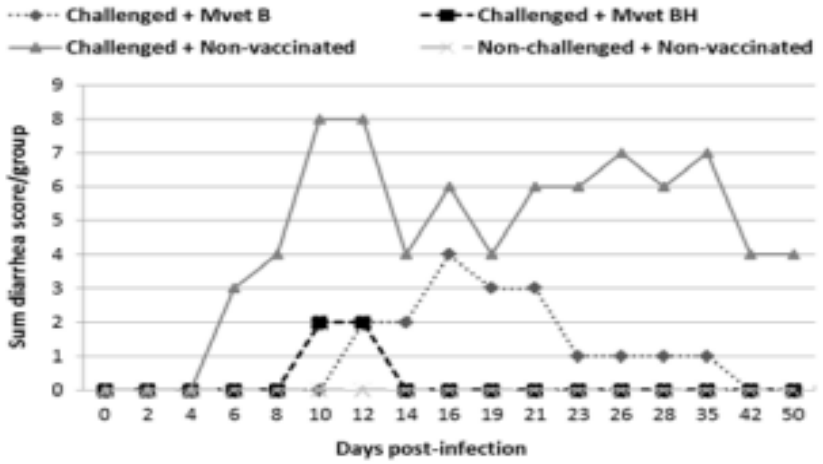


Figure 1 – Diarrhea score per group based on the consistency of the feces during 50 days after the experimental infection.

Table 1 – Average of daily gain (kg ± standard deviation) per group throughout the study.

Group	Experimental infection	
	Before *(21-60 days)*	**After** *(60-110 days)*
Challenged+Mvet B	0,28 ± 0,04	0,47 ± 0,12[a]
Challenged+Mvet BH	0,29 ± 0,03	0,76 ± 0,07[b]
Challenged+Non-vaccinated	0,31 ± 0,05	0,37 ± 0,22[a]
Non-challenged+Non-vaccinated	0,31 ± 0,08	0,79 ± 0,14[b]

Pairwise comparisons are within columns: means that do not share letters are significantly different (p□<□0.05).

Field evaluations using OvuGel® for single fixed-time artificial insemination

Charles Francisco[1], DVM, MS; Michael Johnston[1], MS; Robert Kraeling[2], PhD; Stephen Webel[1], PhD
[1]JBS United Animal Health, Sheridan, Indiana; [2]L&R Research Associates, Watkinsville, Georgia

Table 2: Reproductive performance on three commercial sow farms

	Control	OvuGel®	*P*-Value
Weaned sows	893	894	.
Inseminated by 7 days post-weaning	814	894	.
Sows pregnant	758	772	.
Sows farrowed	715	746	.
Farrowing rate (farrowed / bred)	87.8	83.4	.
Weaned sow farrowing rate (farrowed / weaned)	80.1	83.4	0.08
Total born	14.2	14.0	0.19
Born alive	12.9	12.8	0.34
Total born per semen dose	7.7	11.7	0.0001
Live pigs per 100 sows	1036	1066	.

Sows farrowed Spring 2013.

The data presented in this table are raw means.

Field evaluations using OvuGel® for single fixed-time artificial insemination

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[1]JBS United Animal Health, Sheridan, Indiana; [2]L&R Research Associates, Watkinsville, Georgia

Table 4: Weaned sow utilization on three commercial farms following OvuGel® implementation.

Before OvuGel® implementation					
		Farm 1213	**Farm 1214-N**	**Farm 1214-S**	**All farms**
2011	Weaned sows	2,335	2,334	2,182	6,851
	Inseminated < 7 d post-wean	94.1%	93.3%	86.7%	91.5%
	Conception rate	95.5%	88.8%	80.6%	88.7%
	Weaned sow utilization	89.9%	82.9%	69.9%	81.2%
2012	Weaned sows	2,408	2,359	2,323	7,090
	Inseminated < 7 d post-wean	94.3%	91.1%	86.4%	90.6%
	Conception rate	92.5%	90.9%	86.9%	90.2%
	Weaned sow utilization	87.2%	82.8%	75.1%	81.7%
After OvuGel® implementation					
		Farm 1213	**Farm 1214-N**	**Farm 1214-S**	**All farms**
2013	Weaned sows	2,262	2,329	2,128	6,719
	Inseminated < 7 d post-wean	100.0%	100.0%	100.0%	100.0%
	Conception rate	90.7%	84.6%	79.8%	85.2%
	Weaned sow utilization	90.7%	84.6%	79.8%	85.2%

Weaned sow utilization is the percent of weaned sows inseminated within seven days × conception rate (number pregnant/number weaned sows).

Commercial farm evaluation of sow reproductive performance using OvuGel® with a single fixed-time artificial insemination protocol

Stephen Webel, PhD; Michael Johnston, MS; Charles Francisco, DVM, MS; Mark Swanson, PhD
JBS United Animal Health II LLC, Sheridan, Indiana

Table 1: Reproductive performance at a commercial sow farm (raw means)

	Contemporary	OvuGel®	*P*-Value
Weaned sows	190	194	.
Inseminated by 7 days post-weaning	176	194	.
Sows pregnant	158	166	.
Sows farrowed	158	165	.
Farrowing rate (farrowed / bred)	89.8	85.1	.
Weaned sow farrowing rate (farrowed / weaned)	83.6	85.1	0.69
Total born	13.7	14.6	0.02
Born alive	13.0	13.6	0.11
Total born per semen dose	6.7	12.4	0.0001
Live pigs per 100 sows	1086	1156	.

Sows farrowed spring/summer 2013.

EFFECT OF PHYSICAL VERSUS FENCE-LINE BOAR EXPOSURE ON SYNCHRONIZATION OF ESTRUS FOLLOWING ADMINISTRATION OF MATRIX TO MATURE GILTS

J Stewart, S Storms, R Knox
Department of Animal Sciences, University of Illinois Urbana, IL 61801

- Scrofette 170 gg in gabbia: PG 600 + verro 2x15min > gli animali in estro tra 4 e 6 gg > OK x la prova
- 11 gg dopo PG600 > 14 gg di altrenogest
- 15°gg: 10 e 9 x box (1,5mq) – 3kg capo/gg
  - Verro nel box 2 volte al giorno
  - Verro nel box adiacente (contatto/cancello) una volta gg
- Entro 10gg il 100% ha mostrato un estro ma
- Contatto fisico: estri diluiti in 3 giorni (44-78-100%)
- Contatto cancello: estri diluiti in 6 gg (40-50-60%)

IDENTIFYING FACTORS ASSOCIATED WITH SLOW GROWTH OF PIGS FROM BIRTH TO MARKET

Y. He[1, 2], J. Deen[3], G. C. Shurson[2], C. Chen[4] and Y. Z. Li[1, 2]
[1]West Central Research and Outreach Center, *University of Minnesota*, Morris
[2]Dept. of Animal Science, *University of Minnesota*, St. Paul
[3]College of Veterinary Medicine, *University of Minnesota*, St. Paul
[4]Department of Food Science and Nutrition, *University of Minnesota*, St. Paul

- 440 suini da 65 scrofe da 1 a 7 parti
- Pesati individualmente a 4, 9 sett. e a fine ciclo
- Classificati: lenti, medi e veloci (IMG)
- A fine ciclo: 10% lenti, 49% medi e 41% veloci
- Correlazione dei lenti con peso corporeo e sesso
  - < 1,36 nascita: 9 volte + probabile di essere un “lento”
  - < 6,4 a 28gg (svezz): 14 volte + probabile
  - < 20 a 9 sett. di vita: 20 volte + probabile
  - Femmine: 6-7 volte più probabile
  - No effetto nidiata (età-dimensione) // IGF1 sierico a 9 sett !!!

Use of oral fluids for detection of *Ascaris suum* eggs

Daniel Boykin[1], BS; Jeremy Pittman[2], DVM, DABVP; Rebecca Robbins[3], DVM
[1]North Carolina State University College of Veterinary Medicine, Raleigh, North Carolina;
[2]Murphy-Brown, LLC – North Division, Waverly, Virginia; [3]Seaboard Foods, Guymon, Oklahoma

Table 2: Oral fluid comparison to "gold standard"*

		"Gold standard" results*		
		Positive	Negative	Grand total
Oral fluids results	Positive	69	0	69
	Negative	11	93	104
	Grand total	80	93	173

Kappa (95% CI): 0.871 (0.798, 0.944)
% Agreement = 93.6
Sensitivity (95% CI) = 86.3 (76.3, 92.6)
P-value = < 0.001

* Gold standard was determined as a sample being positive by either test method.

Table 3: Fecal composite comparison to "gold standard"*

		"Gold standard" results*		
		Positive	Negative	Grand total
Fecal composite results	Positive	55	0	55
	Negative	25	93	118
	Grand total	80	93	173

Kappa (95% CI):0.703 (0.600, 0.806)
% Agreement = 85.6
Sensitivity (95% CI) = 68.8 (57.3, 78.4)
P-value = < 0.001

Prendete l'abitudine di discutere un problema sulla base dei dati e rispettando i fatti che essi mostrano.

(Kaouro Ishikawa)

c.lasagna@martinigruppo.com