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JDIP News

JDIP
JOHNES DISEASE INTEGRATED PROGRAM

In This Issue:

APHIS-JDIP Vaccine Testing Project Update

By: Tiffany Cunningham, J.D., Robab Katani, B.S., and Lingling Li, B.S.

The APHIS-JDIP vaccine testing project is moving along as planned. Currently, JDIP is in Phase I of the project. Dr. Vivek Kapur's JDIP laboratory at The Pennsylvania State University has numbered the received cultures and grown the received stains. A shipping schedule has been established with the laboratories of Dr. Srinand Sreevatsan at the University of Minnesota and Dr. Adel Talaat at the University of Wisconsin to distribute the stains to the candidate vaccine testing centers for blinded evaluation. Dr. Kapur's laboratory has already distributed a few strains, which have reached the OD=0.5, to the laboratories of Drs. Sreevatsan and Talaat for further research. Testing will be performed in batches of 5 isolates in each laboratory, and vaccine candidates may be re-tested as needed. The JDIP Epidemiology and Biostatistics Core at Cornell University will analyze the results of the testing in a blinded manner and identify the "Best Candidates." Once the analysis is complete and the blind is opened, all of the program participants will receive the data at the same time.

In summary, Phase I of the three-stage evaluation is going according to plan. It is expected that this rigorous screening process will identify one or more viable candidates to move forward for commercial development. Additional information is available at www.jdip.org if you click on the "Research Resources link in the left-hand column and then on the "Vaccine Project sub-link."

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JDIP News is published periodically to enhance intramural communications and ensure that JDIP participants and stakeholders are updated on news of relevance to our community.

Please direct any comments, contributions and suggestions via email to: Vivek Kapur, JDIP Program Director, at vkapur@psu.edu

USDA
National Institute of Food and Agriculture

NIFA GRANTS

Funding for JDIP is provided through competitive award number 2008-55620-18710 from the Animal Biosecurity Program of USDA-NIFA.

JDIP Year 6 Request for Applications Update

By: Tiffany Cunningham, J.D.

The JDIP received and reviewed a total of 23 proposals in response to the Year 6 Request for Applications (RFA) with a total funding request exceeding $2.1 million. For the current funding cycle a total of $700,000 were available for support of JDIP programs and operations.

All of the submitted proposals were reviewed externally, as well as by the JDIP Scientific Advisory Board (SAB) at an in-person meeting. Members of the External Advisory Board (EAB) as well as the United States Department of Agriculture (USDA) program staff were in attendance at the SAB meeting to help provide input, oversight and observe the review process. As in past cycles, anyone, who may have had a conflict of interest relative to any of the proposals being reviewed, was excluded from the discussions and was not present in the room during the discussion. The JDIP Executive Committee (EC) compiled summary statements from the SAB meeting and based on the reviews and program priorities, made funding recommendations for the full EAB to consider.

JDIP would like to thank all of the internal and external reviewers from the JDIP Year 6 RFA for their hard work and dedication. The review process would not be possible without their continued support.

Review of the JDIP Year 6 RFA (pictured on screen: Dr. Schukken; pictured clockwise: Drs. Paustian, Bermudez, Olson, Hovingh, Hines II, Patton, Sreevatsan, Lein, Kapur, Coussens, Grohn, Gardner, Johnson, McDonald, and Carter)

The diagnostics projects that were submitted were not as closely aligned to the criteria of the RFA as the EC had hoped. The RFA focused on projects that would validate and benchmark the performance standards of diagnostic tests and platforms that have been developed over the past five years. Submitting investigators were encouraged to work with Professors Ian Gardner (JDIP-EC) and Srinand Sreevatsan (JDIP Diagnostics Project Leader). They participated in a special conference call and a meeting at the end of March to develop a coordinated approach to address these major community needs for improved diagnostics for Johne's disease. Any resulting project proposals will undergo the same peer review as well as programmatic and EAB oversight. Please see the Diagnostics Test Standardization Project Update on page 4 for further information.

(continued on page 3)

(continued from page 2)

Based on a review of the proposals, summary statements, and recommendations by the EC, the EAB approved the following projects for support during year 6 (listed alphabetically by the Principal Investigator's last name):

Principal Investigator	Principal Investigator Institution	Co-Principal Investigator	Co-Principal Investigator Institution	Total Award
Bermudez, Luiz	Oregon State University	N/A	N/A	$74,943
Chacon, Ofelia	University of Nebraska-Lincoln	N/A	N/A	$49,779
Coussens, Paul	Michigan State University	Barletta, Raul	University of Nebraska-Lincoln	TBD
Grohn, Yrjo	Cornell University	Gardner, Ian Schukken, Ynte	University of California, Davis Cornell University	TBD
McDonald, Jeannette	The Board of Regents of the University of Wisconsin	N/A	N/A	TBD
Neibergs, Holly	Washington State University	N/A	N/A	$57,134
Schukken, Ynte	Cornell University	Gardner, Ian Grohn, Yrjo Wells, Scott Wu, Ching Ching	University of California, Davis Cornell University University of Minnesota Purdue University	TBD
Talaat, Adel	The Board of Regents of the University of Wisconsin	N/A	N/A	$70,250

***** Please note that all sub-awards for the projects above are in process and have not been executed at this point. *****

Of the aforementioned recipients, the JDIP would like to welcome and introduce Dr. Holly Neiberg's developmental project entitled "Identification of Mutations in Genes Associated with Pathogenesis of *Mycobacterium avium* subspecies *paratuberculosis* Tissue Infection." The goal of Dr. Holly Neiberg's one-year developmental project is to prevent and control Johne's disease to understand how cattle become infected with *Mycobacterium avium* subspecies *paratuberculosis (Map)*. The proposed research will use seek to identify differences in two genes that are located in a region that is highly associated with *Map* tissue infection so that they can better understand how some cattle are resistant to Johne's disease.

Diagnostics Test Standardization Project Update

By: Ian Gardner, Ph.D.

Eleven JDIP members, Drs. Douwe Bakker, Michael Collins, Shigetoshi Eda, Ian Gardner, Jerry Gavalchin, Beth Harris, Vivek Kapur, Jason Lombard, Søren Nielsen, David Smith, and Raymond Sweeney, met in Orlando, Florida for three days to discuss and reach a consensus about reporting standards for test evaluation studies for paratuberculosis in cattle, sheep, goats and deer. The Johne's initiative is based on principles developed in human medicine (STARD: **STA**ndards for **R**eporting of **D**iagnostic Accuracy) to improve the completeness and transparency of reporting of diagnostic test evaluations based on samples from patients with a target condition of interest.

Important conclusions from the Orlando meeting were:

- Principles for reporting developed in the meeting are broadly applicable to other infectious diseases affecting animals, e.g. tuberculosis
- A single document will cover items deemed important for reporting of validation studies of herd and individual animal tests with appropriate examples from paratuberculosis papers, wherever possible
- Design considerations would be dealt with separately. Søren Nielsen has agreed to lead this aspect of the project
- Development of a repository of samples that could be used for test validation studies was considered to be a priority area for JDIP diagnostics

The group, with the help of two other members who were unable to attend (Drs. Srinand Sreevatsan and Richard Whittington), agreed to finalize the work over the next three months and submit a manuscript to Veterinary Microbiology. Veterinary Microbiology has previously published the manuscript on experimental challenge models for Johne's disease which was another JDIP-led multinational initiative.

pictured left to right: Drs. Smith, Eda, Nielsen, Lombard, Bakker, and Gardner

pictured left to right: Drs. Nielsen, Smith, Lombard, Bakker, Gardner and Eda

[not pictured: Drs. Collins, Gavalchin, Harris, Kapur and Sweeney]

JDIP's Annual Meeting at the JAM – July 11-15, 2010 in Denver, CO

By: Ken Olson, Ph.D.

The **2010 JDIP Annual Conference** will be held in conjunction with the Joint Annual Meeting (JAM) of the American Dairy Science Association (ADSA), Poultry Science Association (PSA), Asociación Mexicana de Producción (AMPA), Canadian Society of Animal Science (CSAS), American Society of Animal Science (ASAS) and ASAS Western Section (WSASAS), from July 11 to 15, 2010 in Denver, CO. JDIP and Johne's related sessions will be held on Sunday, July 11th and Monday, July 12th. Sunday's session, beginning at 1 pm in the **Grand Hyatt Denver** at 1750 Welton Street, will focus on reports and plans related to the JDIP Core and Project areas. Monday will include poster and oral presentations of research results. The JDIP/Johne's sessions will be included in the regular JAM meeting schedule at the Convention Center as part of the Animal Health program. The JDIP/Johne's poster session begins at 7:30 am on Monday with JDIP/Johne's oral presentation sections Monday morning and afternoon. There will be many concurrent session on Monday, but both JDIP/Johne's sessions will include only Johne's related papers.

Meeting with the JAM provides the opportunity to participate in a major scientific meeting as well as network with scientists and industry professionals from around the world. The JAM normally draws about 2,600 participants from 50 or more nations. Arrangements have been made for a special one-day JDIP registration for Monday, but JDIP members are encouraged to register for and participate in the full scientific meeting. Details about the JDIP registration special are available on www.jdip.org under "Annual Conferences", "July 2010". Detailed JAM information and the on-line registration section may be found at http://adsa.psa.ampa.csas.asas.org/meetings/2010/

If you have additional questions related to the meeting, please contact:
Dr. Ken Olson, JDIP Outreach Coordinator
Ph: 630-237-4961
e-mail: keolson@prodigy.net

Cornell Summer Program 2010:
"Tools for Infectious Disease Epidemiology: Diagnosis, Modeling and Risk"

Module I: August 2, 9am – August 4, 12pm
Module II: August 4, 1pm – August 6, 4pm
College of Veterinary Medicine
Cornell University
Ithaca, NY

Introduction:
Cornell University is again interested in giving their summer course "Tools for Infectious-Disease Epidemiology." The course contents are distributed among two modules: 1) risk assessment (2 and a half days) and 2) infectious-disease models (2 and a half days). This year Cornell University has modified the workshop to make each module independent so it can be taken either separately or both modules jointly. The course cost is the same as in 2008: each module is $500 or both modules are jointly $900. The student fees are $350 for an individual module or $600 for both modules.

This course is designed for veterinarians, other animal-health professionals, and graduate students who need proficiency in infectious-disease epidemiology. Participants are expected to come to the course with a basic understanding of infectious-disease biology and diagnostic-test terminology.

Faculty:
Yrjö T. Gröhn, Cornell University; Hussni O. Mohammed, Cornell University; Daryl V. Nydam, Cornell University; Ynte H. Schukken, Cornell University; Cristina Lanzas, Cornell University

Schedule – includes lunch, a.m. & p.m. breaks

Module I: Risk Analysis (August 2, 9 am –August 4, noon)

Day 1:

Morning: **Concepts in Risk Analysis**. Microbial, Animal Health, Ecological risk, and Zoonotic assessment

Afternoon: **Laboratory session**—Risk-assessment tools: Scenario pathways; qualitative and quantitative methods in risk assessment. Development of qualitative models (case-study *Cryptosporidium* in man and animals). Deterministic approaches.

Day 2:

Morning: **Exposure assessment and Dose-response models**: Methods, challenges and application using stochastic approaches and simulations. Application of the concepts using @Risk.

Afternoon: **Laboratory session—Uncertainty and variability** Integration of exposure assessment and dose response into simulation models for the case-study. Account for uncertainty and variability.

Day 3:

Morning: **Risk characterization and Mitigation** Sensitivity analysis. Application and interpretation in the case-study using risk based metrics.

Module II: Infectious Disease Modeling (August 4, 1pm – August 6, 4pm)

Day 1:

Afternoon: **Introduction to Infectious disease modeling:** SIR models, Reproduction ratio, Herd Immunity.
Practical: BHV1 infection in a dairy herd, Simple spreadsheet model.

Day 2:

Morning: **Practical:** Setting up and interpreting simple models in ModelMaker Modeling Dynamics of Salmonella infection in a dairy herd.

Afternoon: **Impact of vaccination on the dynamics of infectious diseases Modeling the impact of vaccines in a dairy herd:** Salmonella example.

Day 3:

Morning: **Stochastic models** – small sample size, fade out. Case study: The risk and control of Salmonella outbreaks in calf-raising operations.
Practical: ModelMaker practical related to Salmonella

Afternoon: **Mathematical modeling beyond SIR models for foodborne pathogens** Metapopulation models and within host models Example: antimicrobial resistance dissemination
Practical: Metapopulation models and within host models
Example: antimicrobial resistance dissemination

Fees

Participants may enroll in Module I ($500) or Module II ($500) separately or combined ($900). Students fee $350 per part and $600 combined. Accommodations are not included.

Further Information and Registration:

Please direct inquiries to: Amanda Mott, Cornell College of Veterinary Medicine, S2 169 VEC, Cornell University, Ithaca, NY, 14853-6401, Telephone: 607-253-3200, Fax: 607-253-3198, Email: amm36@cornell.edu

-OR-

View it online at http://www.vet.cornell.edu/education/ConEd.htm

USDA-NIFA Update

By: Vivek Kapur, BVSc, Ph.D.

Unless you have been in hiding or have just returned from intergalactic space travel during the past three weeks, you are probably aware that the USDA's long-awaited AFRI RFA for FY2010 has been released.

The news was mixed for those of us with an interest in Johne's research. The good news is that JDIP will be able to submit an application for release of its final year of support for the Phase II project. As such, we will have another RFA coming out later this year. The not-so-good news is that the total funding in the AFRI Foundational Animal Health program area was $5 million, which is almost half as much of what was available last year in the Animal Health program ($9 million). This is where many of us would submit individual investigator applications in Johne's related research. JDIP investigators had a remarkable run of success in obtaining grants from this program over the past many cycles. The other point of note is that primary AFRI funding emphasis this year has moved into other USDA-NIFA priority areas, such as climate change, global food security and hunger, sustainable energy, childhood obesity, and food safety. However, these areas do not include a portfolio under which Johne's research can be submitted.

While the USDA competitive programs are embarking on a new model that seeks larger projects with greater focus and greater impact on select USDA-NIFA goals, it is too early to ascertain the real impact or unintended consequences of this sea of change in funding approach for animal health programs by the USDA. The good news is that we have a strong and vibrant group of National Program Leaders, who are willing and waiting to make prioritization decisions for the 2011 Foundational Animal Health programs, and NIFA is encouraging stakeholder input on the upcoming RFA. Hence, now is the time to consider providing your comments. My own feeling is that there is absolutely no sense in fighting what is clearly a well-intentioned program and long overdue move towards larger, more focused and impactful projects. We should work with the system in helping set priorities that match the interests of our real stakeholders. I would similarly urge members of the JDIP community to share their comments and perspectives with the National Program Leaders or directly through the NIFA web-site.

As they say, stay tuned!

Bovine TB Coordinated Agricultural Program Proposal

By: Scott Wells, Ph.D.

In response to the recent USDA National Institute of Food and Agriculture RFA in the area of Global Food Security, we are developing a proposal entitled “Tuberculosis Coordinated Agricultural Program” (**TB-CAP**). This TB-CAP proposal has grown out of the concern from cattle industry representatives, government agencies, and public health officials that the US is experiencing a resurgence of *M. bovis* that will have devastating economic effects, cause a disruption or severe restrictions in movements of cattle including exports, and have profound effects on producers who own positive herds and must suffer depopulation or quarantine. To address these concerns, we are assembling US scientists concerned with mycobacterial diseases and their impacts on society. An International External Advisory Board and numerous international collaborators complement this scientific team. These associations will ensure that our efforts are in step with and take full advantage of initiatives and resources in these countries. The group has been formed around three major highly integrated themes:

1) Vaccines, Diagnostics and Immunopathogenesis
2) Epidemiology and Ecology, including Wildlife Issues
3) Education/Extension/Social and Human Dimensions

Projects within each of these themes are designed to address the major issues surrounding detection and control of *M. bovis* infection and how this fastidious organism moves and spreads within both cattle and wildlife populations. We propose that by proper application of diagnostics and effective vaccines, through understanding of pathogenesis and transmission within and between populations, and through public education, we can stop the resurgence of *M. bovis* in the US.

The next step in proposal development is for interested investigators to submit projects to theme lead authors, due by May 15th. These projects should be no more than 5 pages, preferably less, and follow the proposal guidelines. Please contact us if interested in joining our developing integrated research and educational team so we can put you in contact with the appropriate lead authors.

Dr. Paul Coussens, Overall Project Director, Michigan State University, coussens@msu.edu
Dr. Scott Wells, Project Co-Director, University of Minnesota, wells023@umn.edu

New Horizons Workshop at American Association of Bovine Practitioners (AABP)

By: Ken Olson, Ph.D.

“New Horizons in Johne’s Disease Control” workshops have been held in conjunction with the last two JDIP Annual Conferences. The workshops, designed for veterinarians and producers, have proven very popular. They focus on the application of new technology and management practices that work in the field. This year’s workshop will be held on August 17 and 18 as a “Pre-conference Seminar” at the annual meeting of the American Association of Bovine Practitioners (AABP) in Albuquerque, NM. Details on the workshop and registration information is available on the website www.aabp.com under the “Conference” menu. If you are a Johne's Certified Veterinarian in your state's Johne's Disease Control Program, attendance at this seminar will count towards your "re-certification."

General Summary of the 2009 Johne's Disease Fecal Proficiency Panel

By: Dr. Suelee Robbe-Austerman

Overview

A total of 64 laboratories participated in the 2009 Johne's Disease Fecal Proficiency Panel (6 Canadian, 3 European Union and 55 USA laboratories). In the USA, laboratories must order separate panels and demonstrate proficiency for each method they wish to use for the Johne's Disease National Program. Table 1 details the number of individual and pooled panels shipped and the pass/fail status for each method. Laboratories were allowed to order multiple panels for each method and were notified of their preliminary pass/fail status upon submission of their results. They were given the opportunity to retake a failed proficiency panel and nearly all chose to do so. Results in Table 1 include retests.

Table 1. Summary results* of the 2009 Johne's Disease Fecal Proficiency Panel.

	# passed (%)	# not passing (%)	# not returned (%)	Total Shipped
Individual Panel				
Direct PCR (all)	40 (77%)	10 (19%)	2 (4%)	52
Tetracore	24 (89%)	3 (11%)		27
Applied Biosystems	6 (100%)	0		6
In House / Other	10 (59%)	7 (41%)		17
Liquid Systems (all)	34 (79%)	5 (12%)	4 (9%)	43
BACTEC 460	2 (100%)	0		2
MGIT 960	6 (43%)	4 (29%)	4 (29%)	14
TREK	26 (96%)	1 (4%)		27
HEY Solid Media (all)	32 (89%)	3 (8%)	1 (3%)	36
Individual Panel Total	**106 (81%)**	**18 (14%)**	**7 (5%)**	**131**
Pooling Panel				
Direct PCR	25 (96%)	0	1 (4%)	26
Liquid	20 (100%)	0	0	20
HEY	6 (100%)	0	0	6
Pooled Panel Total	**51 (98%)**	**0**	**1 (2%)**	**52**

* In order to pass results must meet the criteria listed in the 2006 Uniform Program Standards for the Voluntary Bovine Johne's Disease Control Program.

Individual Panel Description

Each individual panel consisted of 26 samples with one sample identified as a positive control. Positive samples were collected from naturally infected cows and negative samples were from individual animals residing in non-infected herds. Approximately 4 liters of fecal material were collected per animal and aliquoted as soon as possible in individual vials then stored at -70°C. All 131 individual panels contained the same set of samples. Panels were assembled in groups, each with a different key (See Table 6 at the end of this report for the key). Table 2 shows the categorical (positive/negative) summary performance of each method by cow ID. The culture/PCR error rates were similar with the exception of the low shedding samples from cows 3000 and 86 where liquid media outperformed both direct PCR and solid culture. Despite similar levels of bacteria recovered using solid or liquid media from cow 3000 and 86 (liquid culture average days to positive was 36.4 and 37.0 respectively), direct PCR failed to detect over 50% of samples from cow 86.

Table 2. Composition of the 2009 Johne's Disease Fecal Proficiency Panel, and the overall categorical summary results per cow for each method performed by laboratories.

Cow ID	# Vials / Panel	Date Collected	State of Origin	Shedding Status	Avg. CFU/ Tube[1]	% Samples Correctly Classified[2] Direct PCR	Solid	Liquid
ST10	2	Apr-08	GA	Neg	0	96%	98%	97%
247	2	Oct-08	ND	Neg	0	98%	100%	96%
492903	2	Apr-08	MT	Neg	0	98%	100%	97%
492922[3]	1	Apr-08	MT	Neg	0	96%	100%	97%
3000	1	Apr-08	IA	Low	1.5	72%	69%	87%
86	2	Oct-08	IA	Low	2	47%	73%	88%
14	2	Apr-08	NY	Low	3	96%	92%	91%
420	2	Apr-08	IA	Low	4	92%	89%	95%
311	2	Apr-08	NY	High	325	99%	98%	100%
339	2	Apr-08	NY	High	1000	99%	94%	97%
455	2	Apr-08	IA	High	1775	99%	98%	99%
5	2	Apr-08	IA	High	3350	98%	97%	99%
446[4]	2	Apr-08	IA	High	5625	100%	100%	100%
392	2	Apr-08	IA	High	7275	100%	97%	99%

[1] Colony counts were determined by NVSL, averaging results from 3 cultures for each cow. For high shedders the inoculum was diluted 10^{-x} until colony counts were under 100 per tube.

[2] Samples were classified as positive or negative for MAP by the laboratories. If the sample was represented twice in the panel, it was counted twice. For example Cow ST10 had 2 samples in each panel and 50 panels were submitted using direct PCR (2x50 = 100).

[3] Sample was spiked with *Mycobacterium fortuitum*.

[4] One of the two samples from this cow was identified as the positive control.

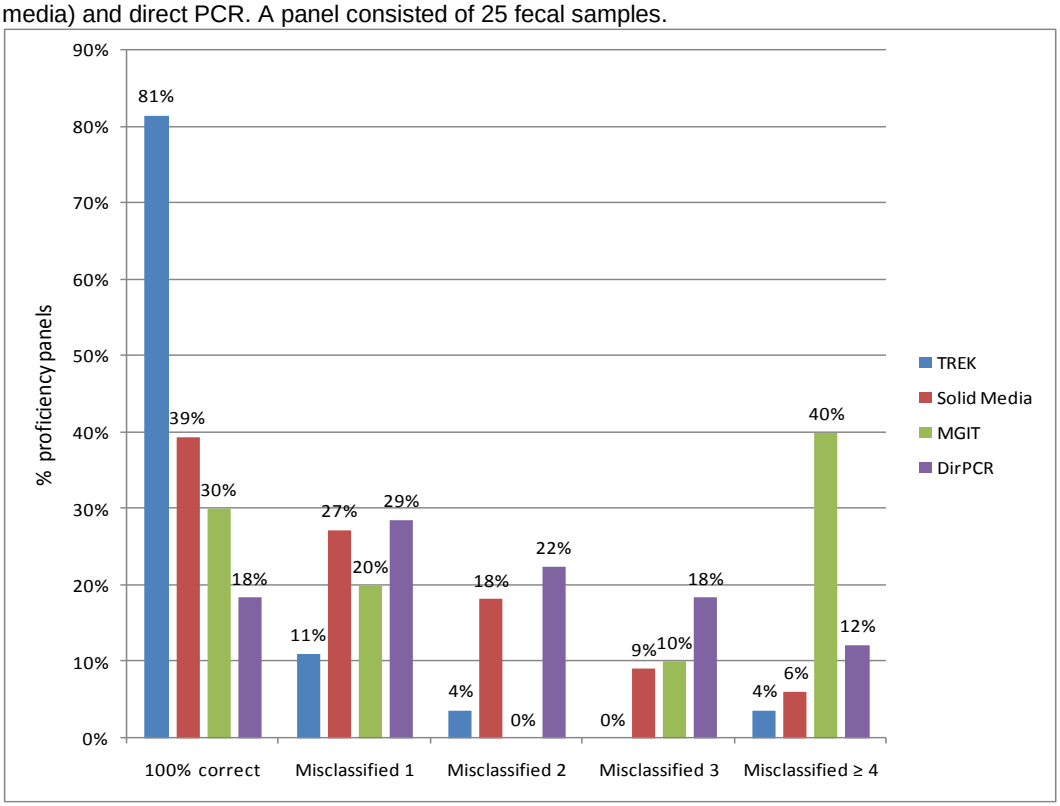
According to the 2006 Johne's Disease Uniform Methods and Rules, laboratories must correctly classify all high shedding samples as positive, all negative samples as negative and misidentify 4 or fewer (<30%) non-critical samples. Table 3 lists the specific reasons laboratories failed to pass the proficiency panel for each method. Misclassifying negative samples as positive continues to be the most common reason for failing a proficiency test. Reports of contamination overgrowth were low and sporadic.

Figure 1 compares the performance of each method by the number of samples misclassified. TREK media had the highest number of panels, 22/27 (81%) that correctly classified all 25 samples followed by solid media 13/33 (39%); MGIT 3/10 (30%); and direct PCR 9/49 (18%). Both solid media and direct PCR tended to indentify low shedding samples as negative suggesting those samples were near the detection limit for these methods.

Table 3. Reasons laboratories failed the 2009 Johne's Disease Fecal Proficiency Panel. Laboratories were required to correctly identify all the negative samples as negative and all the high shedding samples as positive (critical samples). They also were required to correctly classify at least 70% of all samples.

	Direct PCR (Tetracore)	Direct PCR (AB)	Direct PCR (In house)	TREK liquid media	MGIT liquid media	HEY solid media
Misclassified a negative sample as positive	2	0	3	1	1	0
Missed 5 or more low/ moderate shedders (lack of sensitivity)	1	0	1	0	1	1
Misclassified a high shedding sample as negative	0	0	1	0	0	1
A critical sample was contaminated	NA	NA	NA	0	0	1
Multiple reasons cited above	0	0	2	0	2	0
Total failed kits	**3 (11%)**	**0**	**7 (41%)**	**1 (4%)**	**4 (40%)**	**3 (9%)**
Total kits tested	**27**	**6**	**17**	**27**	**10**	**35**

Figure1. Percentage of 2009 Johne's disease fecal proficiency panels by number of samples misclassified for the three culture methods (TREK liquid media, solid media and MGIT 960 liquid media) and direct PCR. A panel consisted of 25 fecal samples.



Pooling Panel Description

Twenty five samples were provided with instructions to pool 5 samples together, for a total of 5 pooled samples. Table 4 lists the contents of each pool. Depending on the key (see table 7 at the end of this report) the vial numbers associated with each pool varied. Laboratories were required to correctly classify the negative pool and the two pools that contained heavy shedders. Laboratories were allowed to misclassify one of the two pooled samples containing only medium or low shedding samples. All laboratories submitting results in 2009 achieved a passing score.

Table 4. Composition of the 2009 Johne's Disease Fecal Pooling Proficiency Panel.

Pool Description	Positive sample(s) description: Cow ID	Positive sample(s) description: Avg. CFU/ tube*
1 High, 4 Negative samples	392	7275
1 Moderately High, 4 Negative samples	311	325
2 Moderate, 3 Negative samples	18	14
2 Low, 3 Negative samples	86	2
5 Negative samples		

*Refers to the positive sample, not the pooled sample

Table 5 further describes the performance of each method used in the pooled proficiency test. While all laboratories passed, liquid media continues to detect the highest number of positive pools. The only pool that was misclassified was the pool with 2 low shedding (cow 86) and 3 negative samples.

Table 5. Performance of each method used in the Johne's Disease 2009 Fecal Pooling Proficiency Panel. A total of 5 pooled samples were in each panel. All laboratories achieved a passing score.

	100% correctly classified	Misclassified 1 sample	**Total**
Liquid Media	**19 (95%)**	**1 (5%)**	**20**
TREK	16	0	16
MGIT	2	1	3
Bactec	1	0	1
Solid Media	**5 (83%)**	**1 (17%)**	**6**
Direct PCR	**15 (60%)**	**10 (40%)**	**25**
Tetracore	12	5	17
Applied Biosystems	1	3	4
In House	2	2	4

Individual detailed results and statistics for each panel will be provided to individual laboratories around October 20, 2009. Certificates of approval will be mailed in November, 2009. A current listing of all the approved laboratories is available in the NVLS web site: http://www.aphis.usda.gov/animal_health/lab_info_services/approved_labs.shtml .

Remaining sample vials from the2009 Proficiency Panel have been made available to laboratories for validation or research purposes. Available samples can be viewed in the reagents catalog under Johne's positive/negative fecal samples on the NVSL web site: http://www.aphis.usda.gov/animal_health/lab_info_services/reagents.shtml.

Any questions or comments can be directed to:

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Table 6. 2009 Johne's Disease Individual Fecal Proficiency Panel key by kit number

Vial #	1-20	21-40	41-60	61-80	81-100	101-120	121-140
1	14	420	86	247	339	ST10	492922*
2	339	455	ST10	311	492903	420	392
3	247	86	**446**	ST10	14	492922*	455
4	311	ST10	14	420	339	392	ST10
5	ST10	**446**	339	455	247	455	420
6	455	14	247	86	311	247	392
7	247	5	311	ST10	ST10	311	492903
8	311	446	ST10	446	420	420	339
9	339	420	455	14	492922*	392	247
10	492903	392	247	5	392	492903	311
11	3000	492903	311	339	455	339	420
12	5	3000	339	420	247	492903	492903
13	86	5	492903	392	311	14	311
14	492922*	86	3000	492903	420	339	5
15	392	492922*	5	3000	392	247	14
16	14	392	86	5	492903	311	339
17	5	455	492922*	86	3000	5	247
18	446	247	392	492922*	5	446	ST10
19	420	311	14	392	86	455	3000
20	392	339	5	455	446	86	5
21	492903	492903	446	247	14	ST10	86
22	420	14	420	311	5	3000	446
23	455	339	392	339	ST10	5	14
24	86	247	492903	492903	455	86	86
25	ST10	311	420	14	86	14	455
26	**446**	ST10	455	**446**	**446**	**446**	**446**

* Sample was spiked with *Mycobacterium fortuitum*.
The bolded 446 sample was identified as the positive control

Table 7. 2009 Johne's Disease Pooled Fecal Proficiency Panel key by kit number

	Pool Sample Number			
Pool Description	**Kit# 1-20**	**Kit# 21-40**	**Kit# 41-50**	**Kit# 51-60**
1 High, 4 Negative samples	1	4	5	2
1 Moderately High, 4 Negative samples	3	3	4	1
2 Moderate, 3 Negative samples	5	2	3	4
2 Low, 3 Negative samples	2	5	1	3
5 Negative samples	4	1	2	5

Upcoming Meetings and Events

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May 2 – 5, 2010
USAHA Regional Meeting: Northeast at the Gideon Putman Resort
Saratoga Springs, New York. USA
http://www.usaha.org/meetings/

May 16 – 19, 2010
USAHA Regional Meeting: South at the Sheraton Gateway Hotel
Atlanta, Georgia. USA
http://www.usaha.org/meetings/

June 8 – 10, 2010
USAHA Regional Meeting: North Central
Omaha, Nebraska. USA
http://www.usaha.org/meetings/

July 11 - 15, 2010
2010 Joint ADSA – PSA- AMPA – CSAS - ASAS Annual Meeting (JAM)
Denver, Colorado. USA
http://adsa.asas.org/meetings/2010/

July 11 – 12, 2010
JDIP Annual Conference
Denver, Colorado. USA (In conjunction with the JAM)
http://jdip.org/

July 28 – August 1, 2010
Cattle Industry Summer Conference (NCBA) in
Denver, Colorado. USA
http://www.beefusa.org/convsummerconference.aspx

August 2 – 4, 2010, Module I
August 4 – 6, 2010, Module II
Cornell Summer Program 2010
"Tools for Infectious Disease Epidemiology: Diagnosis, Modeling and Risk"
College of Veterinary Medicine at Cornell University
Ithaca, New York. USA
http://www.vet.cornell.edu/education/ConEd.htm

August 19 - 21, 2010
43rd Annual Convention of the American Association of Bovine Practitioners in
Albuquerque, New Mexico. USA
http://www.aabp.org/meeting/default.asp

September 28 – October 2, 2010
World Dairy Expo at the Alliant Energy Center of Dane County in
Madison, Wisconsin. USA
http://www.worlddairyexpo.com/gen.home.cfm

October 26 - 28, 2010
NMPF/NDB/UDIA Annual Meeting at the Grand Sierra Resort,
Reno, Nevada. USA
http://www.nmpf.org/annual_meeting

November 11 - 17, 2010
USAHA/AAVLD 114th Annual Meeting at the Minneapolis Hilton Hotel in
Minneapolis, Minnesota. USA
http://www.usaha.org/meetings/

JD In Print – Producer Press

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- **Dickrell, J.,** 2010. Rip, mix and feed. Dairy Today. March 10, 2020.
- IDEXX Laboratories Launches New Johne's Disease Test Approved For Use On Milk. Bovine Veterinarian – Industry News. Apr. 6, 2010.
- Jersey organizations allocate $50,250 for Jersey-specific research in 2010. Progressive Dairyman. April 13, 2010.
- **Jones, C. and J. Heinrichs.,** 2010. Can We Pasteurize Colostrum? Bovine Veterinarian – Industry News. Apr. 22, 2010.
- Angus Advisor – Herd Management Tips. Angus Journal. p. 124. April 2010.

JD In Print – Peer Review
Johne's Disease Related Publications

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- **Adam K, Brülisauer F.** The application of food safety interventions in primary production of beef and lamb: A review. Int J Food Microbiol. 2010 Jan 4. [Epub ahead of print]PMID: 20097438.
- **Aly SS, Anderson RJ, Adaska JM, Jiang J, Gardner IA.** Association between Mycobacterium avium subspecies paratuberculosis infection and milk production in two California dairies. J Dairy Sci. 2010 Mar;93(3):1030-40.PMID: 20172223.
- **Badi FA, Haroon AI, Alluwaimi AM.** The gammadelta cells as marker of non-seroconverted cattle naturally infected with Mycobacterium avium subspecies paratuberculosis. Res Vet Sci. 2010 Feb;88(1):72-6. Epub 2009 Jul 8.PMID: 19589549.
- **Barkema HW, Green MJ, Bradley AJ, Zadoks RN.** Invited review: The role of contagious disease in udder health. J Dairy Sci. 2009 Oct;92(10):4717-29. Review.PMID: 19762787.
- **Basler T, Holtmann H, Abel J, Eckstein T, Baumer W, Valentin-Weigand P, Goethe R.** Reduced transcript stabilization restricts TNF-alpha expression in RAW264.7 macrophages infected with pathogenic mycobacteria: evidence for an involvement of lipomannan. J Leukoc Biol. 2010 Jan;87(1):173-83.PMID: 19850884.
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- **Bosward KL, Dhand NK, Begg DJ, Thomson PC, Emery DL, Whittington RJ.** Optimization of a whole blood gamma interferon assay for the detection of sheep infected with Mycobacterium avium subspecies paratuberculosis. J Vet Diagn Invest. 2010 Mar;22(2):210-7.PMID: 20224078.
- **Bower K, Begg DJ, Whittington RJ.** Optimisation of culture of Mycobacterium avium subspecies paratuberculosis from blood samples. J Microbiol Methods. 2010 Jan;80(1):93-9. Epub 2009 Nov 22.PMID: 19932719.
- **Buddle BM, Wilson T, Denis M, Greenwald R, Esfandiari J, Lyashchenko KP, Liggett S, Mackintosh CG.** Novel serological tests for the rapid diagnosis of bovine tuberculosis in farmed red deer (Cervus elaphus): a study of the sensitivity, specificity and confounding factors. Clin Vaccine Immunol. 2010 Feb 17. [Epub ahead of print]PMID: 20164247.
- **Bull TJ, Linedale R, Hinds J, Hermon-Taylor J.** A rhodanine agent active against non-replicating intracellular Mycobacterium avium subspecies paratuberculosis. Gut Pathog. 2009 Dec 23;1:25.PMID: 20030828.
- **Carroll J, Douarre P, Coffey A, Buckley J, Cashman B, O'Farrell K, O'Mahony J.** Optimization of a rapid viability assay for Mycobacterium avium subsp. paratuberculosis by using alamarBlue. Appl Environ Microbiol. 2009 Dec;75(24):7870-2. Epub 2009 Oct 16.PMID: 19837835.

- **Carvalho IA, Silva A Jr, Campos VE, Moreira MA.** Short communication: detection of Mycobacterium avium subspecies paratuberculosis by polymerase chain reaction in bovine milk in Brazil. J Dairy Sci. 2009 Nov;92(11):5408-10.PMID: 19841202.

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JD In Print – Peer Review
Crohn's Disease Related Publications

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- **AbdullGaffar B.** Granulomatous diseases and granulomas of the appendix. Int J Surg Pathol. 2010 Feb;18(1):14-20.PMID: 20106828.

- **Carpinteri R, Patelli I, Casanueva FF, Giustina A.** Pituitary tumours: inflammatory and granulomatous expansive lesions of the pituitary. Best Pract Res Clin Endocrinol Metab. 2009 Oct;23(5):639-50. Review.PMID: 19945028.

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