



*Semi-annual Report on PADRAP to the AASV Board
Spring, 2010*

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February, 2010



Executive Summary

Key Milestones & Upcoming Events

- The PRRS Risk Assessment for the Growing Pig Herd was released in June 2009
 - Database is currently being populated by student interns and small group of veterinarians
 - Benchmarking reports to be available when database is sufficiently populated
- PADRAP Online is being moved to Microsoft “dot-net” platform
 - Working with developers in Department of Veterinary Diagnostic and Production Animal Medicine at ISU College of Vet Med
 - New version of program will accommodate multiple languages
- Development of version 3 of the PRRS Risk Assessment for the Breeding Herd to be completed spring of 2010

Veterinarians Trained

- Web-based training sessions (via GoToMeeting.com) are being offered to veterinarians new to the program in lieu of face-to-face meetings
 - Web-based training sessions were previously offered only to those that had already attended an AASV sponsored training session to introduce them to the PADRAP Online. Face-to-face training sessions were required for veterinarians new to the program
- The training session now includes some instruction on use of the PRRS Risk Assessment for the Growing Pig Herd
 - Those previously trained on the PRRS Risk Assessment for the Breeding Herd are being given access to the PRRS Risk Assessment for the Growing Pig Herd when requested
- To date, 229 AASV members have been trained to use the PRRS Risk Assessments
- 35 PRRS Risk Assessment training sessions have been conducted in the U.S., Canada, Mexico and online
 - 18 online; 17 face-to-face
- PADRAP is being used primarily by veterinarians and researchers in the U.S, Mexico and Canada
 - Veterinarians from Australia, Germany, South Korea, Netherlands and Bermuda have also been trained

Assessments Completed

- PRRS Risk Assessment for the Breeding Herd
 - 1981 assessments have been completed and submitted to the database of version 2 assessments for 1161 breeding herd sites (as of February, 2010)



- PRRS Risk Assessment for the Growing Pig Herd
 - 155 assessments have been completed and submitted to the database of version 1 assessments for 120 grow-finish sites (as of February, 2010)

Presentations/Reports

- 13 presentations on PRRS Risk Assessment program (from February 2009 to February 2010)
- 113 production system reports sent to veterinarians from February 2009 to February 2010 (34 PRRS-CAP Survival study; 5 non-study; 74 reports sent to PRRS regional eradication project coordinators)

Refereed Publications Related to PADRAP

- A prospective cohort study evaluating duration of breeding herd PRRS virus-free status and its relationship with measured risk. Holtkamp DJ, Yeske PE, Polson DD, Melody JL, Philips RC. Prev Vet Med. (Accepted, pending edits).

Research Projects Utilizing PADRAP

- Identifying ecologic & epidemiologic factors in the control of PRRS: A field-based approach. USDA PRRS Coordinated Agricultural Project USDA PRRS Coordinated Agricultural Project (PRRS-CAP).
- Assessment of PRRS biosecurity in the field: Application of the American Association of Swine Veterinarian's PRRS Risk Assessment for the Breeding herd. USDA PRRS Coordinated Agricultural Project USDA PRRS Coordinated Agricultural Project (PRRS-CAP).
- Quantifying risk factors for PRRS virus introduction into swine herds through the use of the PRRS Risk Assessment for Growing Pigs. National Pork Board.
- Development of new risk assessments and enhancements to the web application for the Production Animal Disease Risk Assessment Program. National Pork Board.
- Quantifying risk and evaluating the relationship between risk score and PRRS-negative herd survival ("PRRS Survival Study"). USDA PRRS Coordinated Agricultural Project (PRRS-CAP).

Regional Control/Eradication Projects Using PADRAP

- Stephens county Minnesota project
- HAM project in west-central Illinois
- Sonora, Mexico
- Quebec, Canada



Background Information

Major Milestones Reached

- Launch of PRRS Risk Assessment for the Growing Pig Herd; June 2009
 - Development team consisted of Drs. Jim Lowe, John Waddell, Paul Yeske, Dale Polson and Derald Holtkamp with input from the University of Illinois EVP Class of 2009
 - Database is currently being populated with the help of student interns and veterinarians who have expressed an interest in doing assessments before risk benchmarking can be done.
- AASV PADRAP Advisory Committee created; February, 2008
- Developed and implemented web-based training for PADRAP Online; January, 2008
- Launch of PADRAP Online (www.padrap.org); November, 2007
- Obtained funding to develop PRRS Risk Assessment for the Growing Pig Herd; November, 2007
- Obtained funding to develop version 3 of the PRRS Risk Assessment for the Breeding Herd; November, 2007

Present

- Collaborative effort
 - AASV
 - NPB - financial support for program and studies using PADRAP
 - Iowa State University, College of Veterinary Medicine - program coordination
 - Boehringer Ingelheim - financial support, training session sponsorship, in-kind support
 - USDA PRRS-CAP (CREES, NC-229) - financial support for studies using PADRAP
 - TooBaRoo LLC - development and support of PADRAP Online, version 1
 - Iowa State University, College of Veterinary Medicine - development and support of PADRAP Online, version 2
- Responsibilities
 - *Program funding and oversight* - Drs. Tom Burkgren, Sue Schulteis and AASV board
 - *Program direction and oversight* - AASV PADRAP Advisory Committee (Drs. John Waddell (chair), Scanlon Daniels, Scott Dee, Tom Gillespie, Michelle Jens, Dale Polson, Spencer Wayne, Paul Yeske)
 - *Program Director* - Dr. Derald Holtkamp
 - *Assistant Program Director* - Jamie Melody
 - *Web application development and technical support* - Breht Burri (TooBaRoo, LLC), Joseph Garza (Iowa State University, College of Veterinary Medicine)
 - *Technical and training support* - Jamie Melody, Drs. Derald Holtkamp, Dale Polson



AASV PRRS Risk Assessment Training Sessions

- Web-based training sessions (via GoToMeeting.com) are being offered to veterinarians new to the program in lieu of face-to-face meetings
- The training session now includes some instruction on use of the PRRS Risk Assessment for the Growing Pig Herd
 - Those previously trained on the PRRS Risk Assessment for the Breeding Herd are being given access to the PRRS Risk Assessment for the Growing Pig Herd when requested
- As of February 2010, 229 swine veterinarians have been trained to use the PRRS Risk Assessment program
 - Since the introduction of PADRAP Online in November 2007, 35 training sessions (18 online; 17 face-to-face) have been conducted in the U.S., Canada, Mexico and online

On-line training for web-based PADRAP; October 05, 2009

On-line training for web-based PADRAP; July 8, 2009

On-line training for web-based PADRAP; May 4, 2009

St. Peter, Minnesota; June 12, 2009

Dallas, Texas; March 07, 2009

On-line training for web-based PADRAP; February 25, 2009

On-line training for web-based PADRAP; February 05, 2009

Ames, Iowa; December 08, 2008

Quebec City, Quebec, Canada; November 13, 2008

On-line training for web-based PADRAP; November 04, 2008

Obregon, Sonora, Mexico; October 29, 2008

On-line training for web-based PADRAP; October 02, 2008

Wilmington, NC; August 14, 2008

On-line training for web-based PADRAP; August 06, 2008

Morelia, Michoacán, Mexico; July 24, 2008

Morelia, Michoacán, Mexico; July 25, 2008

On-line training for web-based PADRAP; July 10, 2008

On-line training for web-based PADRAP; June 30, 2008

On-line training for web-based PADRAP; June 10, 2008

Des Moines, Iowa; June 05, 2008

Mexico City, Mexico; June 03, 2008

Ames, Iowa; May 27, 2008

On-line training for web-based PADRAP; May 02, 2008

On-line training for web-based PADRAP; April 29, 2008

San Diego, California; March 08, 2008

On-line training for web-based PADRAP; March 03, 2008

On-line training for web-based PADRAP; February 26, 2008

On-line training for web-based PADRAP; February 25, 2008

Calgary, Alberta, Canada; February 21, 2008



Winnipeg, Manitoba, Canada; February 22, 2008
On-line training for web-based PADRAP; February 12, 2008
On-line training for web-based PADRAP; January 31, 2008
Jackson Hole Wyoming; January 10, 2008
Ames, Iowa; January 08, 2008
Ames, Iowa; November 10, 2007

- PADRAP is being used primarily by veterinarians and researchers in the U.S, Mexico and Canada
- Veterinarians from Australia, Germany, South Korea, Netherlands and Bermuda have also been trained

PRRS Risk Assessment Database

PRRS Risk Assessment for the Breeding Herd

- 1981 assessments have been completed and submitted to the database of version 2 assessments for 1161 breeding herd sites (as of February, 2010)
 - Several of the sites have had multiple assessments done over time
 - Count includes 205 PRRSv negative sites enrolled in a cohort study to evaluate why some breeding herd sites remain negative while others break (*“Quantifying risk and evaluating the relationship between risk score and PRRS-negative herd survival”*) and 75 PRRSv positive breeding herd sites enrolled in a cross-sectional study to evaluate why some breeding herd sites break more often and severely than others (*“A cross-sectional study of PRRSv positive swine breeding herd sites to evaluate associations between risk factors and a case definition-based number and severity of clinical PRRS episodes”*)

PRRS Risk Assessment for the Breeding Herd

- 155 assessments have been completed and submitted to the database of version 1 assessments for 120 grow finish sites (as of February, 2010).

PRRS Risk Assessment Presentations & Media Interviews*

February 2009 through February 2010

- “Standard PRRS virus definitions and premise classification”
Area-Regional Control of PRRS: Moving from Ideas to Implementation (held in conjunction with the International PRRS Symposium)
December 4, 2009; Chicago, Illinois
- “AASV’s Production Animal Disease Risk Assessment Program (PADRAP) - what it has done for swine production”
Iowa viral hemorrhagic septicemia (VHSv) Aquatic Biosecurity Training and Implementation Workshop
November 6, 2009; Ames, Iowa



- “Understanding Biosecurity Risks: AASV’s PADRAP”
Nigerian Swine Team
September 24, 2009; Ames, Iowa
- “Herd Risk Assessment (AASV’s PADRAP): Progress in Regional Control of PRRS”
Allen D. Lemman Swine Conference
September 19, 2009; St. Paul, Minnesota
- “What’s Happening on the PRRSv Front”
Mobley Group
September 2, 2009; Ames, Iowa
- “6 PRRS Advancements” (Dr. Scott Dee)
Swine Health & Management Report; National Institute for Animal Agriculture
August, 2009; <http://agwired.com/2009/06/04/optimistic-outlook-for-eradicating-prrs/>
- “Understanding Biosecurity Risks: AASV’s PADRAP”
US Grains Council; Taiwan Pork Producers
June 8, 2009; Ames, Iowa
- “Introduction to the AASV PRRS Risk Assessment for Growing Pigs”
BIVI Liaison Meeting
June 3, 2009; Des Moines, Iowa
- “Investigation of Associations Between Risk Factors, Reported Clinical PRRS Breaks and Reproductive Performance in Swine Breeding Herds” (Jess Waddell)
AASV Annual Meeting: Student Seminar
March 8, 2009; Dallas, Texas
- “Case Study: Use of PRRS Risk Assessment for the Breeding Herd to Lower the Risk of PRRS Introduction” (Dr. David Baum, et al)
AASV Pre-conference Seminar: Managing PRRS Introduction into High Risk Populations
March, 2009; Dallas, Texas
- “Application of PRRS Risk Assessment” (Dr. Kevin Vilaca)
AASV Pre-Conference Seminar: Web-based PRRS Risk Assessment Training for the Breeding Herd March 7, 2009; Dallas, Texas
- “On Farm Application of the PRRS Risk Assessment” (Dr. Erin Johnson)
AASV Pre-Conference Seminar: Web-based PRRS Risk Assessment Training for the Breeding Herd
March 7, 2009; Dallas, Texas



- “What is PADRAP (Production Animal Disease Risk Assessment Program)?”
Iowa Pork Regional Conferences
February 16-24, 2009; 6 sessions: Ainsworth, Carroll, Sioux Center, Clive, Oelwein, Dows

**Presentations and interviews made by Derald Holtkamp unless otherwise indicated*

Refereed Publications Related to PADRAP

February 2009 through February 2010

Refereed Publications Utilizing PRRS Risk Assessment Program

- A prospective cohort study evaluating duration of breeding herd PRRS virus-free status and its relationship with measured risk. Holtkamp DJ, Yeske PE, Polson DD, Melody JL, Philips RC. *Prev Vet Med.* (Accepted, pending edits).

Ongoing Research Projects using PADRAP

Identifying ecologic & epidemiologic factors in the control of PRRS: A field-based approach. USDA PRRS Coordinated Agricultural Project (PRRS-CAP II). June 1, 2009. 1 year.

- Zimmerman J.J., Dee S.A., Davies P.R., Holtkamp D.J., O'Connor A.M.
- Objectives: 1) Identify the factors associated with more frequent and severe PRRS in growing pigs, quantify the risk of PRRSV introduction into wean-to-finish sites / breeding herds, and identify risk factors that may be modified to reduce the likelihood of transmission.

Assessment of PRRS biosecurity in the field: Application of the American Association of Swine Veterinarian's PRRS Risk Assessment for the Breeding herd. USDA PRRS Coordinated Agricultural Project (PRRS-CAP II). June 1, 2009. 48 months.

- D.J. Holtkamp, A. Ramirez, A. O'Connor, J. Zimmerman.
- Objectives: 1) Measure changes in biosecurity in swine breeding herds over time using the AASV PRRS Risk Assessment for the Breeding Herd; 2) Identify associations between PRRS risks as measured by the AASV PRRS Risk Assessment for the Breeding Herd and number of reported clinical PRRS breaks in subsequent 3 years.

Quantifying risk factors for PRRS virus introduction into swine herds through the use of the PRRS Risk Assessment for Growing Pigs. National Pork Board. November 1, 2008. 30 months.

- D.J. Holtkamp, J. Lowe, P. Yeske, J. Waddell, D.D. Polson, J. Zimmerman.
- Objectives: 1) To determine and prioritize individual and composite risk factors for introduction of novel PRRSv into swine herds through the use of the AASV PRRS Risk Assessment for the Growing Pig Herd; 2) Assess which risk factors are the most common causes of lateral introduction of novel PRRSV into growing pig production sites.



Development of new risk assessments and enhancements to the web application for the Production Animal Disease Risk Assessment Program. National Pork Board. December 1, 2007. 18 months; Extended through December, 2009.

- D.J. Holtkamp, T. Burkgren, D.D. Polson, A. O'Connor
- Objectives: 1) Complete initial development work for PADRAP Online; 2) develop PRRS Risk Assessment for Growing Pig Herd(version 1); 3) Develop next version (version 3) of the PRRS Risk Assessment for the Breeding Herd.

Quantifying risk and evaluating the relationship between risk score and PRRS-negative herd survival. USDA PRRS Coordinated Agricultural Project (PRRS-CAP). May 1, 2006. 5 year

- R.B. Baker, D.J. Holtkamp, D.D. Polson , L. Karriker, R.B. Morrison
- Objective: Evaluate factors associated with survival of PRRSv negative swine breeding herd sites (where “survival” is defined as remaining PRRS negative).
 - Risks measured using the AASV PRRS Risk Assessment for the Breeding Herd
 - Season site was established negative
 - Method by which site was established negative
 - Region (climate) of the U.S. in which site is located

Student Internships. Promotion of the PRRS Risk Assessments has been accomplished by hiring veterinary and undergraduate students for summer internships to complete annual risk assessment and collect diagnostic data for funded research. Summer 2009 interns included 5 ISU Veterinary students, 1 University of Illinois Veterinary student, and 2 ISU undergraduate students.

Regional PRRS Control/Eradication Projects using PADRAP

Regional projects utilizing PADRAP

- Stephens county Minnesota
- HAM project in west-central Illinois
 - Goal is to have 80% of breeding herd and growing pig sites with more than 100 head assessed
- Regional PRRS control in Sonora, Mexico
 - Risk assessments on-going throughout the state. 83% of the herds completed in spring/summer 2009. 132 surveys have been completed
- Regional PRRS control program in Beauce area near Quebec, Canada
 - Risk assessments done on participating herds during summer/fall 2009



Future Work

PADRAP Online Database

- PADRAP Online is being moved to Microsoft “dot-net” platform. Working with programmers in Department of Veterinary Diagnostic and Production Animal Medicine at ISU College of Vet Med.

Advantages:

- Better analysis and reporting will be available - More “off the shelf” analysis and reporting applications
- Integration with other types of data (i.e. diagnostic, production) will be easier
- New version of program will accommodate multiple languages

Planned training sessions

- Face-to-face training sessions
 - Meetings organized for group of veterinarians (practice, company or veterinarians in an area)
 - Planned sessions
 - AASV Annual Meeting (March 6, 2010 in Omaha, NE)
 - Quebec City (May 11, 2001); Sponsored by Elanco
- Web-based training sessions
 - Delivered using widely available, low-cost web conferencing technologies (GoToMeeting.com)
 - Originally developed for the purpose of training veterinarians who have already attended an AASV sponsored training session - Now using it for all training sessions
 - Offered on an as needed basis
 - Veterinarians are provided a username and password for the web version that is activated upon completion of training on use of the web version

Continued development

- Develop version 3 of the PRRS Risk Assessment for the Breeding Herd
 - Funded by National Pork Board
 - Expected to be complete in Spring 2010
 - Development team consists of Drs. Montse Torremorell, Rodger Main, Jim Lowe, John Waddell, Paul Yeske, Dale Polson and Derald Holtkamp
 - All of the questions, responses and weights in version 2 will be re-evaluated
 - An effort will be made to limit changes so that data from version 2 may be benchmarked with data from 3.0
 - Information used to guide the questions, responses and weights in version 3 will include
 - Analysis of assessment data collected
 - Information learned from the ongoing research projects outlined above
 - Information from experimental research that has occurred since the launch of version 2.0 (such as work done on air filtration)



- Feedback gathered from veterinarians that have used the PRRS Risk Assessment for the Breeding Herd
- Other information from published and unpublished sources

- Expansion to other diseases, other stages of production and perhaps other species
 - Prototype of boar stud assessment is being planned

- Improvements to PADRAP Online
 - Improved reporting and database analysis capabilities
 - Adding “intelligence” to auto-fill responses based on responses to previous questions
 - Long list of other priorities based upon user feed-back