A Survey of Mastitis Management on Dairy Farms
January 17, 2013

Dear Dairy Producer/Manager:

You are being asked to participate in a research study of dairy farmers conducted by Michigan State University, the Pennsylvania State University, Florida A&M, and Mississippi State University. We are asking you to take part because you are listed in your state as an active dairy farm producer. The purpose of this study is to design and implement mastitis control practices that will help reduce mastitis and antibiotic use on dairy farms.

The survey will ask you questions about your dairy farm, opinions about mastitis, mastitis control, diagnosis and treatment practices, milking facilities and practices, housing and bedding type, sources of information regarding mastitis, farm labor issues, dairy farm business, and dairy farming. The questionnaire will take about 20 minutes to complete. This survey should be completed by an owner or manager at your dairy farm. Your input is very important to help researchers design mastitis control practices that address farmers’ concerns and interests.

Participation in this study is strictly voluntary and there are no foreseeable risks in participating or not participating in the survey. Your participation is expected to help design better programs to reduce mastitis and antibiotic use on U.S. dairy farms. You may choose to withdraw or refuse to answer any particular question without any penalty. Your responses to this survey questions will remain confidential and data collected for this research will be kept strictly confidential to the maximum extent allowable by law. Only the primary and co-primary research investigators of this study will have access to the data and no identifying information will be saved with the data. Your completion and return of this questionnaire indicates that you consent to the use of your responses in this study.

The results of this research study will be available on the study website and may be published or presented at professional meetings by the researchers. Only aggregate information will be presented in papers, reports, and other publications.

If you have any concerns or questions about this research study, please contact any of the investigators listed below:

Dr. Ron Erskine, College of Veterinary Medicine  Dr. Rebecca Schewe, Dept. of Sociology
Michigan State University    Mississippi State University
(517) 353-4637      (662) 325-5124
crskine@cvm.msu.edu    Rebecca.schewe@msstate.edu

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(814) 863-8526     (850) 412-5252
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If you have questions or concerns about your role and rights as a research participant and would like to obtain information, offer input, or register a complaint about this study, you may contact, anonymously if you wish, the Michigan State University’s Human Research Protection Program at 517-355-2180, irb@msu.edu or regular mail at 408 W. Circle, Room 207 Olds Hall, MSU, East Lansing, MI 48824. Or you may contact the Office of Regulatory Compliance and Safety at Mississippi State University at (662) 325-3994, Fax (662) 325-8776.

Thank you for completing this survey.

Sincerely,

Rebecca L. Schewe, Mississippi State University
1. Are you still operating a working dairy farm?
   - YES, CONTINUE
   - NO, THANK YOU, PLEASE MAIL BACK BLANK SURVEY

2. Are you an owner or manager of this dairy farm?
   - YES, CONTINUE
   - NO, PLEASE GIVE SURVEY TO AN OWNER OR MANAGER

3. What is the total number of adult cows (all lactations; milking and dry) on your farm?
   - COWS

4. What is the number of milking cows?
   - COWS

5. Did the number of milking cows increase in the last 12 months?
   - YES, BY COWS
   - NO, DECREASED BY COWS
   - NO, HERD SIZE ABOUT THE SAME

6. Are heifers raised entirely on the farm?
   - ALL
   - SOME
   - NONE

7. What is your average milk production (bulk tank) per day?
   - LBS.
   - DON'T KNOW

8. What was your total milk per cow last year (rolling herd average)?
   - LBS.
   - DON'T KNOW

9. What was your bulk tank somatic cell count (monthly average) for the last 3 months?
   - MOST RECENT
   - 2 MONTHS AGO
   - 3 MONTHS AGO
   - DON'T KNOW
10. How does current bulk tank somatic cell count compare with your average bulk tank somatic cell count from one year ago?

- HIGHER  - SAME  - LOWER  - DON'T KNOW

11. How does current bulk tank somatic cell count compare with your average bulk tank somatic cell count from three years ago?

- HIGHER  - SAME  - LOWER  - DON'T KNOW

12. If current bulk tank somatic cell count is lower than three years ago, what was the cause of this reduction? Please mark all that apply.

- A. GROUPING OF COWS
- B. HOUSING OF COWS
- C. BEDDING
- D. EMPLOYEES
- E. MILKING FACILITIES
- F. MILKING PRACTICES
- G. TREATMENT PRACTICES
- H. OTHER, PLEASE DESCRIBE:

13. Of the above causes of reduced bulk tank somatic cell count, which were the most important? Please write the letter in the space below:

- MOST IMPORTANT
- 2ND MOST IMPORTANT
- 3RD MOST IMPORTANT

ABOUT GROUPING

Please mark with an “X” the response that best answers the question for your farm or fill in the blank.

14. Are dry cows (far-off) and pre-fresh cows (close-up) kept in separate groups?

- YES  - NO

15. Are calving pens shared with hospital/sick cows?

- YES  - NO

16. Are first lactation cows separated from older lactating cows?

- YES  - NO
17. Are fresh cows (transition) cows separated from other lactating cows?

- [ ] YES
- [ ] NO

18. What is the total number of milking cow groups on the farm?

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**HOUSING AND BEDDING**

19. Listed below are housing types you may be using. For each of the cow types (columns), please mark with an “X” the housing you currently use. Mark all that apply.

<table>
<thead>
<tr>
<th>HOUSING TYPE</th>
<th>DRY COWS</th>
<th>PRE-FRESH COWS (2-3 WKS OUT)</th>
<th>SPRINGING HEIFERS</th>
<th>MATERNITY PEN COWS</th>
<th>FRESH (TRANSITION) COWS</th>
<th>LACTATING COWS</th>
</tr>
</thead>
<tbody>
<tr>
<td>GREENHOUSE OR HOOP BARN</td>
<td></td>
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<td>FREE STALL BARN</td>
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<tr>
<td>STANCHION OR TIE STALL</td>
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<td>LOOSE HOUSING</td>
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<td>OUTDOOR LOT</td>
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<td>PASTURE</td>
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<tr>
<td>COOLING POND</td>
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<tr>
<td>OTHER HOUSING</td>
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</tbody>
</table>

**PLEASE SPECIFY OTHER HOUSING TYPE**
20. Listed below are bedding types you may be using. For each of the cow types (columns), please mark with an “X” the bedding you currently use. Mark all that apply.

<table>
<thead>
<tr>
<th>BEDDING TYPE</th>
<th>DRY COWS</th>
<th>PRE-FRESH COWS (2-3 WKS OUT)</th>
<th>SPRINGING HEIFERS</th>
<th>MATERNITY PEN COWS</th>
<th>FRESH (TRANSITION) COWS</th>
<th>LACTATING COWS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATTRESS WITH NO BEDDING</td>
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<tr>
<td>MATTRESS WITH STRAW, SAWDUST, OR WOOD SHAVINGS</td>
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<tr>
<td>PLATFORM WITH SAWDUST, STRAW OR WOOD SHAVINGS</td>
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<tr>
<td>RECYCLED MANURE - DIGESTED</td>
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<tr>
<td>RECYCLED MANURE - NOT DIGESTED</td>
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<tr>
<td>SAND - FRESH</td>
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<td>SAND - RECYCLED</td>
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<tr>
<td>STRAW, SAWDUST OR WOOD SHAVINGS (LOOSE HOUSING)</td>
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<td>PASTURE</td>
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<tr>
<td>OTHER BEDDING</td>
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</tbody>
</table>

PLEASE SPECIFY OTHER BEDDING TYPE

21. What type of milking facility do you have on your farm:

- [ ] TIE STALL-STANCHION
- [ ] PLATFORM
- [ ] SIDE IN- SIDE OUT PARLOR
- [ ] HERRINGBONE PARLOR
- [ ] PARALLEL PARLOR
- [ ] ROTARY PARLOR
- [ ] SWINGLINE PARLOR
- [ ] ROBOTIC, SPECIFY MANUFACTURER:
- [ ] OTHER (PLEASE SPECIFY):

22. What is the number of milking units normally in use?


23. How frequently do you milk your cows? (Please mark only one):
- TWICE A DAY FOR ALL COWS
- THREE TIMES A DAY FOR ALL COWS
- THREE TIMES A DAY EXCEPT FOR TREATED COWS WHO ARE MILKED TWICE A DAY
- COWS ARE MILKED 2 OR 3 TIMES A DAY DEPENDING ON MILKING GROUP
- VOLUNTARY MILKING WITH A ROBOTIC MILKING SYSTEM
- OTHER, PLEASE DESCRIBE: 

24. What is the total number of people who milk cows on the farm?

25. What is the total number of people who milk cows during each milking?

26. Are udders washed or sprayed with water before milking?
- YES
- NO

27. Are teats disinfected before milking (pre-dip)?
- YES, PROCEED TO QUESTION 28
- NO, SKIP TO QUESTION 29

28. How is the pre-dip applied?
- SPRAYED
- DIPPED
- FOAM CUP

29. Are gloves worn during milking?
- YES
- NO
30. Are teats stripped **before** milking?
   - YES  
   - NO

31. Are teats massaged **before** milking (other than stripping)?
   - YES  
   - NO

32. Are teats dried **before** milking?
   - YES, PROCEED TO QUESTION 33  
   - NO, SKIP TO QUESTION 34

33. Do you use separate towels for each cow?
   - YES  
   - NO

34. Are teats disinfected **after** milking (post-dip)?
   - YES, PROCEED TO QUESTION 35  
   - NO, SKIP TO QUESTION 36

35. How is the post-dip applied?
   - SPRAYED  
   - DIPPED  
   - FOAM CUP

36. Are some cows milked **after** the automatic takeoff removes the unit?
   - YES  
   - NO  
   - N/A

37. How often are pulsators evaluated (graphed) for performance?
   - LESS THAN ONCE A YEAR  
   - ABOUT ONCE A YEAR  
   - AT LEAST TWICE A YEAR  
   - AT LEAST ONCE A MONTH

38. How often is the entire milking system evaluated?
   - LESS THAN ONCE A YEAR  
   - ABOUT ONCE A YEAR  
   - AT LEAST TWICE A YEAR  
   - AT LEAST ONCE A MONTH

39. How many times are liners (inflations) replaced?
   - TIMES PER MONTH  
   - TIMES PER YEAR  
   - DON'T KNOW
40. How often are you in the parlor and observing milking?

- NEVER
- LESS THAN ONCE A MONTH
- ABOUT ONCE A MONTH
- ABOUT ONCE A WEEK
- ABOUT ONCE A DAY
- ALMOST EVERY MILKING

41. How much time elapses from when teats are first massaged (or stripped) until units are attached?

- DON’T MASSAGE OR STRIP TEATS
- LESS THAN 30 SECONDS
- BETWEEN 30-60 SECONDS
- BETWEEN 1-2 MINUTES
- GREATER THAN 2 MINUTES
- NOT SURE

CURRENT MASTITIS CONTROL AND THERAPY PRACTICES

Please mark with an “X” the response that best answers the question for your farm or fill in the blank.

42. Mastitis Management (Indicate whether you do the following with an “X”. Mark all that apply.)

<table>
<thead>
<tr>
<th></th>
<th>NEVER</th>
<th>SOMETIMES</th>
<th>FREQ.</th>
<th>ALWAYS</th>
<th>N/A</th>
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</thead>
<tbody>
<tr>
<td>A. MILK MASTITIS AND TREATED COWS IN A SEPARATE GROUP</td>
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<td>B. USE OXYTOCIN FOR MILK LETDOWN</td>
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<tr>
<td>C. USE INTRAMAMMARY ANTIBIOTICS AT DRY OFF (DRY TREATMENT)</td>
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<tr>
<td>D. USE AN INTERNAL TEAT SEALANT (ORBESEAL©) AT DRY OFF</td>
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<td>E. DOCK TAILS</td>
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<td>F. SINGE HAIR ON THE UDDERS</td>
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<tr>
<td>G. USE VACCINES TO CONTROL COLIFORM MASTITIS (J-5®, J-VAC®, ETC)</td>
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<tr>
<td>H. USE VACCINES TO CONTROL <em>Staph aureus</em> MASTITIS</td>
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<tr>
<td>I. INSURE STRICT COMPLIANCE WITH MILKING PROTOCOLS</td>
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<tr>
<td>J. CLEAN ALLEYS/GUTTERS AFTER OR DURING EACH MILKING</td>
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<tr>
<td>K. TRAIN EMPLOYEES IN MASTITIS PROTOCOLS</td>
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</table>

Of the above practices, which are the most important in reducing mastitis? Please write the letters below.

- MOST IMPORTANT
- 2ND MOST IMPORTANT
- 3RD MOST IMPORTANT
Diagnosis and Treatment (Indicate whether you do the following with an “X”. Mark all that apply.)

<table>
<thead>
<tr>
<th>Practice</th>
<th>NEVER</th>
<th>SOMETIMES</th>
<th>FREQ.</th>
<th>ALWAYS</th>
<th>N/A</th>
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</thead>
<tbody>
<tr>
<td>A. Use individual cow SCC to identify infected cows</td>
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<tr>
<td>B. Use conductivity in milk to identify infected cows</td>
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<td>C. Culture milk samples from high SCC or conductivity cows</td>
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<tr>
<td>D. Culture milk samples from clinical mastitis cases</td>
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<td>E. Culture bulk tank milk samples</td>
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<td>F. Keep written or computer treatment records for all cows</td>
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<tr>
<td>G. Treat mastitis cows for the full course of antibiotic doses</td>
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<tr>
<td>H. Review treatment records before making treatment decisions</td>
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<tr>
<td>I. Use systemic antibiotics to treat clinical mastitis</td>
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<td>J. Use intramammary antibiotics to treat clinical mastitis</td>
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<tr>
<td>K. Use anti-inflammatory drugs to treat clinical mastitis</td>
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<tr>
<td>L. Use oxytocin to treat clinical mastitis</td>
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<tr>
<td>M. Use natural (organic) therapies to treat clinical mastitis</td>
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<tr>
<td>N. Use alcohol pads before intramammary tube infusions</td>
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<tr>
<td>O. Train employees in treatment protocols</td>
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</tbody>
</table>

Of the above practices, which are the most important in reducing antibiotic use? Please write the letters below.

- MOST IMPORTANT
- 2ND MOST IMPORTANT
- 3RD MOST IMPORTANT

44. My mastitis treatment plan was designed with or by my veterinarian

- YES
- NO
45. How often do you hold team meetings with milkers and other employees/professionals to discuss quality milk?

- NEVER
- 1 OR 2 TIMES/YEAR
- QUARTERLY
- ONCE A MONTH
- AT LEAST TWICE A MONTH
- N/A, NO EMPLOYEES

46. Are there any cultural/language barriers in communicating with employees?

- YES
- NO
- N/A, NO EMPLOYEES

47. How many people administer antibiotic therapy on the farm?

48. Where do you go for information that is influential regarding mastitis? Please rate the importance of the following sources of information for your herd with an “X”. Mark all that apply.

<table>
<thead>
<tr>
<th>Sources</th>
<th>VERY IMPORTANT</th>
<th>UNIMPORTANT</th>
<th>NEITHER</th>
<th>IMPORTANT</th>
<th>VERY IMPORTANT</th>
</tr>
</thead>
<tbody>
<tr>
<td>VETERINARIAN</td>
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<tr>
<td>MILK COOPERATIVE</td>
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<tr>
<td>COOPERATIVE EXTENSION</td>
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<td>FARM JOURNALS</td>
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<tr>
<td>OTHER DAIRY PRODUCERS</td>
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<tr>
<td>INTERNET</td>
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<tr>
<td>DRUG COMPANY REPRESENTATIVES</td>
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PLEASE SPECIFY OTHER SOURCE
49. I get concerned if the somatic cell counts in my herd reaches approximately (Please select one):

- 100,000 CELLS/ML
- 150,000 CELLS/ML
- 200,000 CELLS/ML
- 250,000 CELLS/ML
- 300,000 CELLS/ML
- 350,000 CELLS/ML
- 400,000 CELLS/ML
- 450,000 CELLS/ML
- 500,000 CELLS/ML
- MORE THAN 500,000 CELLS/ML

50. I get concerned if the percent of mastitis cows (clinical and subclinical) reaches (Please select one):

- 5% OF COWS
- 10% OF COWS
- 15% OF COWS
- 20% OF COWS
- 25% OF COWS
- 30% OF COWS
- 40% OF COWS
- DON'T EVALUATE THIS WAY

51. Please indicate whether you agree or disagree with the following statements with an "X". Mark all that apply.

<table>
<thead>
<tr>
<th>STRONGLY DISAGREE</th>
<th>DISAGREE</th>
<th>NEITHER</th>
<th>AGREE</th>
<th>STRONGLY AGREE</th>
</tr>
</thead>
<tbody>
<tr>
<td>MASTITIS IS A PROBLEM ON MY FARM</td>
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<tr>
<td>NOT FOLLOWING MILKING PROTOCOLS IS A PROBLEM ON MY FARM</td>
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<tr>
<td>NOT FOLLOWING TREATMENT PROTOCOLS IS A PROBLEM ON MY FARM</td>
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<tr>
<td>BAD LUCK PLAYS AN IMPORTANT ROLE IN MASTITIS PROBLEMS</td>
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<tr>
<td>WEATHER PLAYS AN IMPORTANT ROLE IN MASTITIS PROBLEMS</td>
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<tr>
<td>MILKING EQUIPMENT PLAYS AN IMPORTANT ROLE IN MASTITIS PROBLEMS</td>
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<tr>
<td>STRAY VOLTAGE PLAY AN IMPORTANT ROLE IN MASTITIS PROBLEMS</td>
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<tr>
<td>EMPLOYEES PLAY AN IMPORTANT ROLE IN MASTITIS PROBLEMS</td>
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</tbody>
</table>
52. How many people work on this farm, including family (paid and non-paid) and non-family employees?

Number of family workers (paid and unpaid):

Number of non-family paid employees:

53. In 2012, how many of your employees typically worked:

- LESS THAN 20 HRS/WEEK
- 20 TO 40 HRS/WEEK
- MORE THAN 40 HRS/WEEK

54. How many of your employees have worked on your farm for:

- PART-TIME:
  - 1 TO 12 MONTHS:
  - 12 TO 24 MONTHS:
  - MORE THAN 24 MONTHS:

- FULL-TIME:
  - 1 TO 12 MONTHS:
  - 12 TO 24 MONTHS:
  - MORE THAN 24 MONTHS:

55. Did children less than 16 years help with milking on this farm?

- YES
- NO

56. Do employees receive a financial or other incentive based on milk quality?

- YES
- NO

57. Do employees receive a financial or other penalty if SCC increases?

- YES
- NO
58. Please indicate how important each management strategy is to you with an “X”. If you don’t have employees, please skip ahead to the next question.

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<tr>
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<th>VERY UNIMPORTANT</th>
<th>UNIMPORTANT</th>
<th>NEITHER</th>
<th>IMPORTANT</th>
<th>VERY IMPORTANT</th>
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<tbody>
<tr>
<td>RECRUITING GOOD EMPLOYEES</td>
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<td>RETAINING GOOD EMPLOYEES</td>
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<td>MOTIVATING EMPLOYEES WITH POSITIVE FEEDBACK</td>
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<td>CORRECTING EMPLOYEES WITH NEGATIVE FEEDBACK</td>
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<td>CLOSELY SUPERVISING EMPLOYEES</td>
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<td>SETTING GOALS FOR EMPLOYEES</td>
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<td>INCLUDING EMPLOYEES IN SETTING FARM GOALS</td>
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<td>INCLUDING EMPLOYEES IN SETTING FARM DECISIONS</td>
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<td>EVALUATING EMPLOYEE PERFORMANCE</td>
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<td>PROVIDING TRAINING OPPORTUNITIES FOR EMPLOYEES</td>
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59. Please indicate how important each goal is to you with an “X”.

<table>
<thead>
<tr>
<th>Goal</th>
<th>VERY UNIMPORTANT</th>
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<tbody>
<tr>
<td>Staying in the Dairy Business</td>
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<tr>
<td>Increasing Income/Profits</td>
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<td>Increasing Off-Farm Income</td>
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<td>Preparing for Retirement</td>
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<td>Setting up the Farm for the Next Generation</td>
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<td>Improving the Image of Dairy Products</td>
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<td>Improving Herd Health</td>
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<td>Reducing Feed Costs</td>
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<td>Reducing Labor Costs</td>
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<td>Reducing Use of Antibiotics for Mastitis</td>
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<td>Reducing Antibiotic Residue in Milk</td>
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<td>Reducing Antibiotic Residue in Culled Cows</td>
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<td>Improving Milk Quality</td>
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<td>Receiving a Financial Incentive for Milk Quality</td>
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<td>Increasing Milk Production</td>
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<td>Increasing Herd Size</td>
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</table>
60. What is the zip code of your farm?


61. Does your herd participate in DHIA testing?

   YES   NO

62. Sex

   MALE   FEMALE

63. Age

   YEARS

64. What is your primary position in this dairy-farm business? (Please mark only one.)

   SOLE PROPRIETOR   JOINT OWNER WITH FAMILY
   LEASING AND OWN SOME EQUIPMENT/LIVESTOCK   NON-FAMILY PARTNER
   MANAGER   OTHER, PLEASE SPECIFY:  

65. What year did you begin to work on any part of this dairy farm?

   YEAR

66. What is your race/ethnicity? (Please mark all that apply)?

   WHITE   BLACK OR AFRICAN AMERICAN
   AMERICAN INDIAN OR ALASKA NATIVE   ASIAN
   HISPANIC OR LATINO   OTHER

67. Is English your first language?

   YES   NO
68. Are you a member of an Amish community?
   - YES
   - NO

69. Are you a member of a Mennonite community?
   - YES
   - NO

70. What is the highest level of formal education you completed?
   - LESS THAN HIGH SCHOOL DIPLOMA
   - HIGH SCHOOL OR EQUIVALENT
   - SOME COLLEGE (INCLUDE ASSOCIATE DEGREE)
   - BACHELOR'S DEGREE OR BEYOND

71. In 2012, what percent of your total household income came from this dairy farm?
   - % OF INCOME
If your herd uses DHIA testing and you are willing to share mastitis records, please provide the herd code number and Remote Access Code for on-line download of files.

Herd code:  
Remote Access Code:  

Your submission of DHIA information is voluntary. To protect your confidentiality and anonymity, this page will be destroyed after a code is assigned to the questionnaire.

Thank you for your responses. Please return the completed questionnaire in the pre-stamped envelope that came with the questionnaire.