An integrated Approach to Improve Dairy Cow Fertility

OVERALL OBJECTIVE

To improve reproductive efficiency of lactating dairy cows using an interdisciplinary extension and research team that will identify and remove barriers to reproductive success and link outcomes of basic and applied research with an innovative extension delivery program.

Researchers:
- Victor Cabrera, Assistant Professor Management
- Paul Fricke, Professor Reproductive Physiology
- Pam Ruegg, Professor Physiology and Management
- Randy Shaver, Professor Nutrition
- Milo Wiltbank, Professor Reproductive Physiology
- Kent Weigel, Professor Breeding and Genetics

Project Staff:
- Connie Cordoba, DVM Outreach Specialist
- Carol Hulland, Milk Quality Laboratory Technician
- Post doctoral and PhD students
- Matt Akins, Saleh Shahinfar, Afshin Kalantari
- Maria José Fuenzalida Valenzuela

Specific Aim 1:
Characterize the contributions of specific management factors to the observed variation between commercial dairy farms in cow fertility.

Specific Aim 2:
Determine the impact of specific nutritional components on reproductive performance of lactating dairy cows.

Specific Aim 3:
Identify the impact of mastitis on fertility and pregnancy loss in lactating dairy cows.

Specific Aim 4:
Evaluate the economic impact of reproductive management strategies on overall farm sustainability under a variety of management scenarios.

Specific Aim 5:
Generate measurable improvement in the reproductive performance of dairy herds by developing and implementing an integrated team-based extension program that builds on existing professional relationships within the farm community.

Project Progression

Data Collection
Through an agreement with Ag Source beginning on January 2010, we have access to direct digital download of raw data from participating farms at cow level.

Records collected as of January 1, 2010 to date

<table>
<thead>
<tr>
<th>Records collected as of January 1st 2010 to date</th>
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<tbody>
<tr>
<td>Test day milk records</td>
</tr>
<tr>
<td>cows with test-day milk records</td>
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<tr>
<td># herds that provided milk production records</td>
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<tr>
<td>Reproduction events</td>
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<tr>
<td>Cows with reproductive events</td>
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<td># herds that have provided reproductive events</td>
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<td>3,269</td>
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<th>Expected decision support tools</th>
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<td>User-friendly and interactive dairy management tools</td>
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Expected results

Initial Outcomes

Long-term outcomes

Dairy producers will improve reproductive success by:
- Being aware of nutrition and mastitis impacts on cow fertility
- Implementing mastitis and nutritional programs
- Improved skills to implement enhanced reproductive programs

Benefits for Wisconsin’s Dairy industry and across the US:
- Results from this project will be transferred throughout the US via collaboration with extension
- Improved nutrition, mastitis control and other reproductive factors will improve the efficiency in fertility of dairy cows.

Gain skills in the use of DSS tools to improve reproductive success

Improvement in dairy farm net revenue due to an improvement in dairy cow fertility

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