28th ADSA Discover Conference on Food Animal Agriculture:

Starch for Ruminants
October 6-9, 2014
Northern Illinois University
Conference Center in Naperville, IL
Hosted by the American Dairy Science Association®

Conference Format
The Discover Conference Series is designed to provide a format and venue that encourages in-depth discussion of cutting-edge science.

ADSA Discover ConferencesSM focus on topics of importance to the science of food animal agriculture and are held in a relaxed, informal setting. Sessions for this conference will allow ample time for discussion, networking and relaxation.

Program Committee Organizers:
Co Chairs:
Dr. Randy Shaver, University of Wisconsin - Madison
Dr. Rick Grant, Miner Institute, Chazy, NY
Dr. Bill Weiss, The Ohio State University

Committee Members:
Dr. Mike Allen, Michigan State University
Dr. Galen Erickson, University of Nebraska
Dr. Patrick C. Hoffman, University of Wisconsin – Madison
Dr. Mark Nelson, Washington State University

Starch for Ruminants

Conference Objective
During the past several years, the price of feed energy has increased 2 to 4 times its historic norm, caused in large part by the two- to four-fold increase in corn price. This large and very rapid increase in corn price has generated a firestorm of interest globally on alternatives to corn in ruminant (dairy and beef) rations and has led many to critically evaluate the use of starch in ruminant diets. The development of new strategies and methods to improve the utilization of starch by ruminants to either reduce feed costs and (or) improve animal performance on reduced-starch diets are now major focus areas for academic and industry researchers. While research with beef cattle on starch has long been abundant, this area is a relatively new frontier for dairy cattle research and field application. Therefore, a tremendous opportunity now presents itself for dialogue between dairy and beef cattle nutritionists and researchers on the proposed topic.

The goal of this Discover Conference is to provide a venue for this exchange to occur and allow for greater field input into research directions and the opportunity for improved field application through enhanced participant exchange of ideas. Another important objective is the inclusion of experts in cereal chemistry, feed processing, and plant breeding to enhance animal scientist’ understanding of emerging technologies in those disciplines with regard to starch utilization by ruminants.

Conference Topics
- Starch in Ruminant Diets
- Starch Digestion & Utilization in Ruminants
- Starch & Animal Health/Performance
- Starch Physico-Chemistry & Plant Genetics
- Ensiled Starch Sources
- Dietary Starch Inter-Relationships with Other Nutrients
- Starch Digestibility Assays & Rumen Modeling

Who Should Attend?
This conference is for members of the dairy and animal science community who are interested in the impact of dietary starch on the performance of dairy and beef cattle. Researchers, extension specialists, and consultants from academia, government agencies, and allied industries encompassing feed and animal health companies are invited. Graduate students are encouraged to attend.

Registration
Registration postmarked by September 6, 2014 is $375.00 for ADSA-ASAS-ARPAS members and $425.00 for non-members, which includes sessions and most meals. After September 6, the registration fee will be $475.00 member/$525.00 non-member, and will be accepted on an availability basis. To optimize interaction among participants, registration will be limited to the first 130 applications received.

Accommodations & Travel
All participants are responsible for making their own lodging reservations. The conference hotel is Country Inn & Suites, Naperville. Reservations can be made online at the Conference Accommodations link at http://www.adsa.org/Meetings/DiscoverConferences/28thDiscoverConference.aspx

For complete conference information, including the latest program and registration materials, go to: http://www.adsa.org/discover/
Monday October 6, 2014

4:00 - 6:00 PM Registration, NIU Conference Center Lobby
5:00 Reception
6:00 Dinner
7:00 - 8:00 PM Opening Session - NIU Conference Center
Welcome Larry Miller, DISCOVER Conference Series and DC28 Co-chair Randy Shaver, Univ. of Wisconsin
Conference Keynote: Outlook on Global Demands for Starch Sources & Impacts on Availability and Costs for Livestock Feeds. Rick Tolman, National Corn Growers
8:00 ADJOURN

Tuesday October 7, 2014

7:00 - 8:00 AM Continental breakfast, NIU Conference Center Lobby
8:00 - 12:00 PM Session 1 – Ruminant Session I. Moderator: Bill Weiss, The Ohio State Univ.
Welcome and Announcements
Is Starch a Required Nutrient in Dairy Cattle Diets? Mike Allen, Michigan State Univ.
Is Starch a Required Nutrient in Beef Cattle Diets? Galen Erickson, Univ. of Nebraska
Discussion
9:40-10:10 BREAK
Sites of Starch Digestion – Ruminal, Intestinal, Hindgut, Total Tract Gerald Huntington, North Carolina State Univ.
Post-Absorptive – Propionate vs. Glucose etc. Shawn Donkin, Purdue Univ.
Discussion
12:00-1:15 LUNCH
1:15 - 4:00 PM Session 2 - Cereal Crop Session. Moderator: Pat Hoffman, Univ. of Wisconsin
Physico-Chemistry of Cereal Grains that Influence Ethanol Production. Vijay Singh, Univ. of Illinois
Historic and Current Genetic Variation in Corn Endosperm Types Paul Scott, USDA, Iowa State Univ.
Discussion
3:15-4:00 BREAK
4:00 - 5:00 PM Session 3 - Ruminant Session II. Moderator: Galen Erickson, Univ. of Nebraska
The Latest on the Impact of Ruminal Acidosis on Animal Health and Performance. J. C. (Kees) Plaizier, Univ. of Manitoba
Discussion
5:00 ADJOURN

Wednesday October 8, 2014

8:00 - 12:00 PM Session 4 – Lab Analyses & Modeling Session, Moderator: Mike Allen, Michigan State Univ.
Laboratory Evaluation of Dry and Ensiled Grain Physic-Chemistries. Pat Hoffman, Univ. of Wisconsin
Starch Digestibility Assays. Ralph Ward, Cumberland Valley Analytical Services, Inc.
Discussion
9:30-10:00 BREAK
Modeling Ruminal and Total Tract Starch Digestion. Jeff Firkins, The Ohio State Univ.
Current and Potential Application of Starch and its Digestibility in Diet Formulation. David Weakley, Forage Genetics, Inc. and John Metcalfe, Nutreco
Discussion
11:45-12:45 LUNCH
12:45 - 5:00 PM Session 5 - Work Group Sessions
- Starch and Starch Digestibility Assays for Feeding Ruminants
  PC Facilitator – Rick Grant, Miner Institute; Speaker – Dave Mertens, Mertens Innovations & Research LLC
- Modeling
  PC Facilitator – Mike Allen, Michigan State Univ.; Speakers - David Weakley, Forage Genetics, Inc. and John Metcalfe, Nutreco
- Genetic Diversity and Potential Selection for Starch Properties in Corn
  PC Facilitator – Pat Hoffman, Univ. of Wisconsin; Speaker – Francis Glenn, Glenn Seeds Ltd., Guelph, Canada
- Ensiled Starch Sources
  PC Facilitator – Randy Shaver, Univ. of Wisconsin; Speaker – Limin Kung, Univ. of Delaware
- Animal Health – i.e. Acidosis, SARA, Laminitis, Transition Cows, Environmental Interactions
  PC Facilitator – Galen Erickson, Univ. of Nebraska; Speaker – Dairy: Heather Dann, Miner Institute
- Processing & Enzyme Opportunities
  PC Facilitator – Bill Weiss, The Ohio State Univ.; Speaker – Karen Beachemin, Ag Canada, Lethbridge
3:15-3:45 BREAK
Work-group reports and discussion. Moderator: Rick Grant, Miner Institute
5:00 ADJOURN

Thursday October 9, 2014

8:00 - 12:00 PM Session 6 – Ruminant Session III. Moderator: Randy Shaver, Univ. of Wisconsin
Dietary Starch Inter-Relationships with Other Nutrients
Non-Starch Carbohydrates. Bill Weiss, The Ohio State Univ.
Protein. Masahito Oba, Univ. of Alberta
Fat/Fatty Acids. Tom Jenkins, Clemson Univ.
Discussion
10:00-10:30 BREAK
DC28 Wrap Up. Randy Shaver, Univ. of Wisconsin
11:30 ADJOURN