

General Session

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75-Year History of the Minnesota Nutrition Conference

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This year marks the 75th year of an animal nutrition meeting for the feed industry and livestock nutritionists in Minnesota and the Midwest. The first meeting was held in 1940 and called the "Animal Nutrition Short Course for Feed Manufacturers and Dealers". The earliest publication record for the nutrition meeting is the "Fourth Annual Animal Nutrition Short Course for Feed Manufacturers and Dealers" held in 1944 at the University of Minnesota. Cooperating agencies for the meeting were the Northwest Retail Feed Association, Minneapolis, and the Northwest Feed Manufacturers and Distributors Association, Minneapolis.

The meeting was called "Animal Nutrition (or Animal Nutrition and Health) Short Course" until 1961 when the name was changed to "Minnesota Nutrition Conference for Feed Manufacturers". "Dealers" was added to the title in 1962 and 1963, but in 1964, the conference name officially became the "Minnesota Nutrition Conference". From 1940 to 1950, the short course was held the last full week of October. Earliest documentation for the annual mid-September (2nd or 3rd week) meeting is 1951. All meetings were held on the University of Minnesota St. Paul Campus until 1966 when the meeting was moved off campus to a hotel in downtown Minneapolis. Since 1966, the meetings have been in various hotels in the Twin City metropolitan area and in Owatonna, Minnesota (2008-2012).

The Northwest Feed Manufacturers Association has been a cooperator and sponsor of the Minnesota Nutrition Conference since 1944. Since the very early years, the conference has been a partnership between the University of Minnesota and the feed industry with personnel from the academic and business sectors serving on the administration and program planning committees of the conference. Other early and long-time sponsors of the conference are American Feed Industry Association (AFIA)/American Feed Manufacturers Association (AFMA) (36 years), Northwest Agri-Dealers Association, Inc., (35 years). Long-time (>10 years) company partners and sponsors of the conference include: Chr. Hansen – Animal Health and Nutrition, Diamond V, Hormel Foods, International Ingredient Corporation, ILC Resources, Kindstrom-Schmoll Inc., Min-AD Inc., Prince Agri Products Inc., QualiTech Corporation, Vita Plus Corporation, and Zinpro Corporation. The support of these long-time sponsors and all sponsors is greatly appreciated and is a major reason the conference achieved a 75-year history.

Technical or Pre-Conference symposiums were added to the conference in 1985. These half-day programs, usually the first morning of the conference, have provided conference attendees with additional scientific programming and comprehensive information on both fundamental biology and contemporary nutrition issues. The Conference greatly appreciates the support of the companies and organizations sponsoring the Technical Symposium over the last 30 years (1985-2014). Listed below in chronological order are the companies/organizations that have sponsored symposiums.

Year	Company/Organization
1985	Monsanto
1986, 1993	National Renders Assn.
1987	Pitman-Moore, Inc.
1988	Degussa Corp.
1989	Heartland Lysine, Inc.
1994	Roche
1995, 2010	Alltech
1996	Protiva (Monsanto)
1997	BASF
1998	International Protein Corp.
1999	Zinpro Corp.
2000	Minnesota Soybean Research and Promotion Council
2001, 2005, 2011	Minnesota Corn Growers Assn.
2002	American Protein Producers Industry and Central Region Renders Assn.
2003	Pioneer (DuPont)
2004	Chr. Hansen, Inc.
2008	Prince Agri Products, Inc.
2009	BFI Innovations, Inc. / Nutriad
2012	DuPont Industrial Biosciences
2013	DSM Nutritional Biosciences
2014	Vi-COR

Program planning for the conference has long been a cooperative effort between industry nutritionists and University of Minnesota faculty. Joint planning committees are listed in most of the proceedings starting in late 1950. Many industry and university people have served on the planning committee over the years, but of special note is the planning committee chair(s). For the 25th anniversary (1964), Dr. Paul Waibel, University of Minnesota Department of Poultry Science chaired the committee. Starting in 1965, co-chairs were first identified for the conference, one from industry and one from the University of Minnesota Department of Animal Science. For the 50th anniversary, the co-chairs were Dr. Marshall Stern, Department of Animal Science, and Dr. Dave Gast, International Multifoods. The 75th anniversary co-chairs are Dr. Krishona Martinson, Department of Animal Science, and John Goihl, Agri-Nutrition Services. Of special recognition is John Goihl's service to the Minnesota Nutrition Conference. He has contributed thousands of hours since 1975 serving on the conference planning committee almost every year and as industry co-chair of the planning committee from 1975 to 1978 and from 1993 to present.

Since the inception of the conference in 1940, the format of the meeting has generally remained the same. A two-day meeting with university and invited speakers discussing various nutrition and management aspects of farm animal species. Presentations relating to the major livestock species, poultry (turkeys), swine, dairy and beef have been the primary focus of the conference over the last 75 years (Table 1).

Presentations on sheep nutrition and management have appeared sporadically in the conference over the years starting in the 1940's. The first horse nutrition presentation occurred in 1965, but the majority of the presentations have occurred since 2010 when an equine session was added to the conference. The nutrition of companion animals (dogs and cats), fish and game birds has been discussed at the conference, but significantly fewer times than nutrition of traditional farm animal species. As illustrated in Table 1, the unique identity of the Minnesota Nutrition Conference is it is a multi-species nutrition conference. It is one of the few conferences in the US that remain a multi-species nutrition conference.

Table 1. Number of presentations by species over the last 75 years.

Species	Number of presentations
Poultry	230
Swine	208
Dairy	190
Beef	134
Horse	25
Sheep	16

The most frequent presenters at the conference have been Department of Animal Science faculty from the University of Minnesota. During the first 50 years, four individual faculty and one team of beef faculty presented more than 10 times. Paul Waibel, poultry scientist, leads all presenters with 27 followed by the beef team of Dick Goodrich and Jay Meiske with 18, Robert Meade (swine) at 17, and Bob Jordan (sheep and horses) and Don Otterby (dairy) each with 11. Over the last 25 years, a larger number of faculty have presented with nine presentations by a presenter the most to date. Alfredo DiCostanzo (beef), Lee Johnston (swine) and Sally Noll (poultry) each have nine presentations followed by Jerry Shurson (swine) at eight, Krishona Martinson (equine) at seven. Five individuals, Craig Coon (poultry), Grant Crawford (beef), Hugh Chester-Jones (dairy), Jim Pettigrew (swine) and Marshall Stern (ruminant), each presented 6 times during the last 25 years.

Protein and amino acids lead the number of presentations given in both the non-ruminant and ruminant program sections over the 75 years (Figure 1). For non-ruminants, the first 25 years was a shift in emphasis from total protein in diets to balancing for amino acids and identifying amino acid deficiencies in feeds. Total protein (crude) in diets as related to production responses and sources of protein (urea and feeds) were the predominant protein topics in ruminant nutrition presentations the first 25 years. The second 25 years (1965 to 1989) focused on further defining amino acid requirements of poultry and swine along with digestible amino acid requirements, ideal proteins and the interrelationship between protein and energy content of the diet. The ruminant focus on protein nutrition between 1965 and 1989 continued on total protein and protein sources (NPN vs. feed) in diets with protein requirements of rumen bacteria and amino acid requirements of the animal beginning to appear in presentations. Protein nutrition emphasis in the 1990's and 2000's was similar in non-ruminant nutrition as the previous 25 years except more interest appeared on how dietary protein and amino acids affected animal products. In ruminant nutrition, new protein terms such as soluble, rumen degradable and rumen undegradable (bypass) appeared more frequently in presentations and amino acid requirements of lactating dairy cows replaced presentations on total dietary protein.

Minerals along with vitamins have been the second most frequent nutrient topic presented at the conference over the last 75 years (Figure 1). Presentations on calcium and phosphorus and interaction with vitamin D were the most frequent with requirements being defined and the effects of these nutrients on animal health and bone metabolism. Sulfur as it contributed to protein and amino acid metabolism and affected health of animals was frequently discussed. Presentations on trace minerals in diets have been more frequent the last 25 years focusing on requirement and metabolism of individual minerals along with bioavailability of organic and inorganic trace mineral sources.

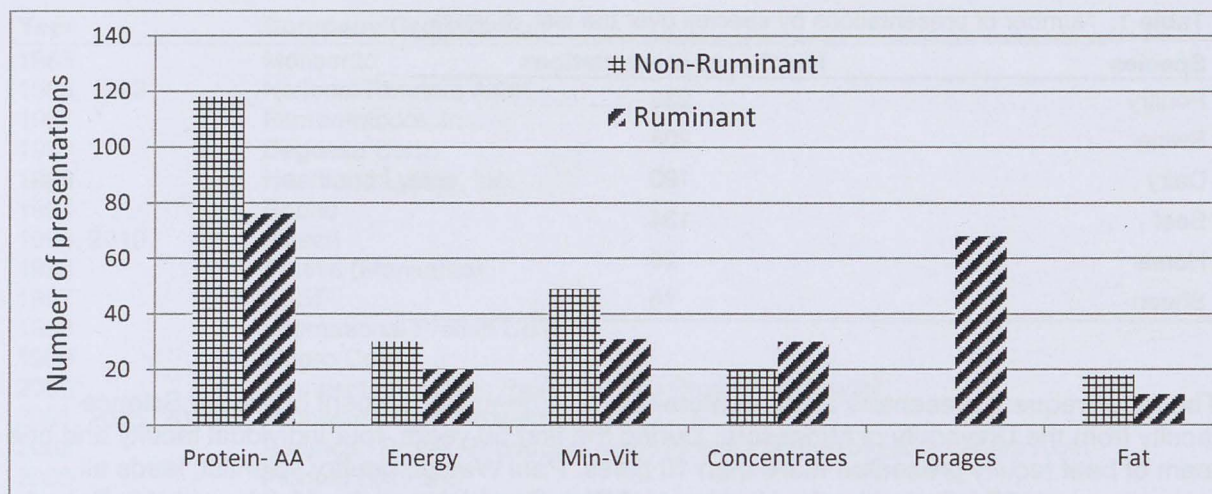


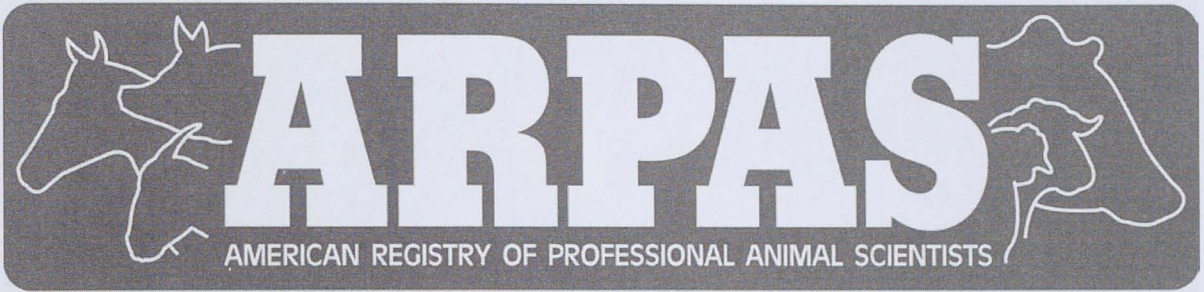
Figure 1. Number of presentations related to nutrients and feeds by non-ruminant and ruminant titles over 75 years.

Corn, its nutrient content and amount to feed, has been the most frequently discussed grain for all species. Similarly, soybean meal has been the predominate protein source discussed, but distillers grains has received considerable interest starting in the 1990's. Quality and fiber contribution to the diet was the theme of most forage presentations over the years with a shift from hay and pasture in the early years to haylage in the 80's and corn silage the last 20 years.

There have been 24 talks on formulating rations for various species over the 75 years with the first mention of computers in ration formulation occurring in 1963, "linear programming of swine rations". Since the 1960's, ration formulation has migrated from mainframe to laptop computers and simple linear feed programs have been replaced with dynamic nutrition models that incorporate farm-specific animal, feed, and environmental characteristics into the biology of the animal and determination of their nutrient requirements.

The effect and interaction of management practices on nutritional requirements and subsequent animal performance has always been part of the conference presentations, but most apparent in the last 25 years. More contemporary and societal issues regarding animal production and animal agriculture practices have been introduced into the conference program. Nutrition talks within the last 25 years were more likely to cover concerns over excess nutrient feeding and the effect of nutrients in the air, in water and on the land than meeting nutrient requirements of the animal. The use and public concern of hormones, antibiotics and additives to enhance animal production have appeared as conference topics more in the last 25 years than ever before. Include in this category is animal welfare, which was only mentioned a few times as stockmanship in the first 50 years of the conference. While the conference continues to focus on nutrient requirements of animals and the feeds and products to meet these requirements, the scope and breadth of the conference has expanded to include how nutrition of animals is affected by and effects the environment we live in.

The conference strives to be a partnership between the University of Minnesota and the feed and livestock industries of Minnesota and the nation. The Minnesota Nutrition Conference thanks all of the sponsors and attendees of the conference over the last 75 years. A sincere appreciation is extended to the American Registry of Professional Animal Scientist (ARPAS) Midwest Chapter, for sponsoring this paper and presentation.



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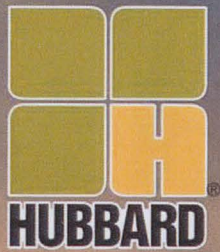


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