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# The Northwest Experiment Station News

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## Dairy Projects Reviewed

*Dr. Yassin Massri (I), Dept. of Animal Science, University of Damascus (Syrian Project); Dr. C.W. Young, dairy cattle geneticist; and Dr. J.D. Donker, dairy cattle nutritionist, U of M, Dept. of Animal Science, St. Paul, visited with Dr. George Marx, dairy scientist at the Northwest Experiment Station on the progress of the breeding and nutrition project relating to small and large cows. The project is now in its 18th year and some animals are in their 6th generation of breeding. A substantial amount of data is being collected and will be analyzed to determine the most practical and efficient size cow for dairy production. A considerable amount of progress has been achieved to date. Cows in the herd now range from 900 to 2,000 lbs. body weight. Large cows give slightly more milk, but small cows produce slightly more milk fat than large cows. Small cows eat 4% less feed than large cows and produce calves averaging 12 lbs. less body weight at birth. Large cows have more salvage value. Males from large cows grow faster and finish for slaughter 200 lbs. heavier than smaller bred males raised for dairy beef.*



## Richard White Resigns

*Richard White, farm animal attendant with the Northwest Experiment Station, resigned recently. Richard and Linda White were honored at a coffee party at the Ag Research Center. Richard and his family will be moving to his home farm in the Park Rapids area where they will be operating a dairy farm.*

*Richard joined the dairy crew in the fall of 1978 and did many jobs in the dairy department from milking on the early shift to feeding and tending the cows. The staff of the Northwest Experiment Station wish Richard and Linda the best of luck in their new endeavor.*



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## Smith's Comments



The research results gathered during the crop growing season of 1984 are now being analyzed and prepared for distribution through experiment station publications and extension meetings. The success of many of these research trials involved the cooperation of producers throughout the State, who generously provided land and other inputs on their farms for these trials. Without their support, the data base on which conclusions are drawn would be much smaller. The staff of the Northwest Experiment Station

along with the Minnesota Agricultural Experiment Station wish to thank the following individuals and their families who provided land and other resources in 1984: Ronald Peterson, Fisher, MN; Robert Ross, Fisher, MN, Roger Bucholtz, McIntosh, MN; Bruce Hamnes, Stephen, MN, Paul Horn Jr., Moorhead, MN and Ken Dahl, Granite Falls, MN.

The remodeling of the ARC has begun (I hope). When completed, the existing auditorium will be completely refurbished and provide an excellent meeting facility. The remodeling of the classroom into three offices and two technician rooms will once again consolidate our staff now located in a number of make-shift offices (cubby holes) around the building. I'm sure those moving from these temporary facilities that lack adequate heating will encourage the contractor to finish the project on schedule.

With the coming of the holiday season, the staff of the Northwest Experiment Station wish all of you a very Merry Christmas and a prosperous New Year (with hopefully better grain, livestock and livestock product prices).

## Debbie Resigns



*Debbie Potter was honored at a farewell party in the Ag Research Center in September. Helping her display her farewell cake is her "boss", Roger Ruthenberg.*

*Debbie resigned her job as research plot technician at the Northwest Experiment Station as she has enrolled in the College of Agriculture and is working toward a degree in agronomy at NDSU. Debbie started working with the sugarbeet research project for Larry Smith in 1977 on a summertime basis. In 1980, she joined the Station full time to work with the sugarbeet project.*

*We will all miss Debbie's friendly smile and we wish her the best of luck in her studies at NDSU.*

## Calendar of Events

**1985**

Dairy Day  
January 8

Sugarbeet Growers Meeting  
Grand Forks  
January 23

Sugarbeet Growers Meeting  
Grafton  
January 29

Sugarbeet Growers Meeting  
Fargo  
January 31

Southern Minnesota SBG  
Meeting Willmar  
February 13

Red River Valley Winter Shows  
February 13 - 24

American Association of  
Sugarbeet Technologists - San  
Diego  
February 15 - 24

Sugarbeet Growers Institute  
March 20 & 21



*Happy Holidays*

*From*

*The Northwest*

*Experiment Station*

*Staff*

## Associates 1000 Members



*John and Florence St. Germain, Argyle, Minnesota were recently presented the "Minnesota" plaque for their membership contribution to the Associates 1000 for support of agricultural research in northwestern Minnesota. Lowell Larson (r), University of Minnesota Foundation representative of Crookston, and Gene Miller, Northwest Experiment Station development person were hosted by the St. Germain family on Florence's birthday.*

*John is a member of the overall steering committee for fund development at UMC and the Northwest Experiment Station. The St. Germain family is well acquainted with both the research and educational facilities at Crookston, having sons who attended both the Northwest School of Agriculture and UMC.*

*Harvey Diamond, Hallock, is pictured with Gene Miller, Northwest Experiment Station, as he receives recognition for his contribution to the Agricultural Research Fund.*

*Harvey was one of the first persons to join the Associates 1000 in support of the research fund at Crookston. One of the many graduates of the Northwest School of Agriculture, Harvey actively farms in the Hallock area.*

*The Northwest Experiment Station Research Fund is an annuity fund of which only the interest each year will be spent to improve agricultural research in northwestern Minnesota. Total pledges to date exceed \$150,000 according to Miller who now devotes part of his schedule to the fund raising effort.*



# 8th Annual Northwest Sheep Day

The 8th Annual Northwest Sheep Day was held at the Northwest Experiment Station, Crookston, on Thursday, November 15. The program consisted of progress reports on sheep research projects in which the University is involved.

Dr. Harvey Windels, animal scientist at the Northwest Experiment Station, reported on "fall vs. prelambling shearing" and "energy level of growing replacement ewe lambs". In his first report, Windels indicated that several premises existed. Noting that prelambling shearing, which in recent years has become popular since it affords ewe cleanliness during birth of the lamb and early suckling contacts, does require housing for a longer period of time when lambing occurs in February. Since sheep producers continue early lambing practices in order to bring lambs along for the early market, it appears other systems needed study.

Fall shearing results in ewes that have too much wool to go through the early spring and summer, therefore, possibly two shearings will be required and the project is proceeding on that basis. Data will also need to be collected on fall breeding problems that may occur as a result of this type of system. Windels reported that the group of ewes shorn in the fall of 1983 were confronted with a very cold December and as a result in each case lost approximately five pounds of weight which they did not gain back. The ewes had been shorn on November 1, 1983.

In the groups shorn in November, the rate of pneumonia in later lambs and rates of contracting coccidiosis were no different than the group shorn in February.

Trials comparing high energy levels with low energy levels of feed for growing replacement ewe lambs consisted of 70% grain and 30% roughage on the high side while the low ration was 30% grain and 70% roughage on a dry matter basis. In each trial, the Targhee, half-Finn and half-Suffolk are being used to produce the data for this research. The scientists will determine whether the high energy ration brings the ewe along faster for breeding and whether this high level of feed might produce fatty tissue in the female udder and be a detriment in the long run.

Mr. Garry Ransom, Boissevain, Manitoba, Canada, reported on his practical



(L) Garry Ransom, Commercial Sheep Producer, Boissevain, Manitoba, Tig Shafto, Sheep Specialist, Manitoba Dept. of Agriculture, Winnipeg, Man., with Dr. Harvey Windels, Animal Scientist, U of M, Northwest Experiment Station, Crookston, during the recent Sheep Days meetings held at Crookston.

management techniques involved with his 500-head commercial ewe flock. Ransom related to problems they had from over-feeding younger bred ewes along with the adjustment they made to prevent prolapse problems. The Manitoba producer tries for a 200% lamb crop and related how he deals with extra lambs resulting from triple and quadruple births. When Ransom tried breeding his sheep flock more than once a year, he said the first problem encountered was a lower percentage lamb crop each time which added up to about the same production as lambing once a year. It appeared the problem was with the rams who were not as fertile during the summer months even in their Canada environment.

Dr. Robert M. Jordan, University of Minnesota, research and extension specialist, spoke to the group on several topics including "lamb feeding and marketing", "raising triplets", and a further review of "practices and problems of Minnesota sheep producers". Under marketing strategies, Jordan suggested lamb producers have offered very little variety to the market. "The customer must take the legs and shanks and everything much the same as he has been offered as long as one can remember." Jordan inferred that sheep producers might follow the lead of other groups such as the

turkey growers and develop a wider range of choices in their product.

In his talk on raising triplets, Dr. Jordan showed records of trials at the University of Minnesota which resulted in higher production per ewe and cheaper total feed rations per lb. of gain with triplets carried on the same ewe. Although many producers set aside a triplet with a "grafting" or orphan procedure, Jordan showed that with a good ewe this may not be necessary.

Looking at a survey of good Minnesota sheep producers, Jordan showed graphic illustrations of practices and problems within the industry which still need better management. Open ewes and treatment for several of the disease problems still requires close scrutiny and better management practice according to the records.

The 8th Annual Sheep Day was concluded with a tour through the sheep facilities at the Northwest Experiment Station, Crookston with Dr. Windels, Jerome Sirek (sr. technician), and Herman Gilbertson (animal attendant), University of Minnesota, Northwest Experiment Station. The latest statistical data organization was credited to Jeffrey Vollesky (jr. scientist, livestock, Northwest Experiment Station).

# Japanese Officials Tour NW Experiment Station



Pictured left to right are U.S. and Japanese officials who toured and held seminars at the University of Minnesota, Northwest Experiment Station, Crookston, recently. Harvey Bloomquist, MN Barley Council President; Charles Otten, U.S. Feed Grain Council; Henry M. Thomson, Director, U.S. Feed Grains Council; Dr. George Marx, Dairy Scientist, NWES; Marcus Lower, USDA Economist, Washington, D.C.; John Mittleider, Marketing Specialist; and Richard Daws, Chairman, ND Barley Council; with (right front row) Seiji Terada, Program Coordinator, U.S. Feed Grains Council; Taeko Takeyama, Chief, Rice and Feed Section, Import Division, Food Agency; Tetsudo Oda, Assistant Director, Livestock Management Division, Livestock Bureau; Kiyoshi Kanbe, Assistant Director Processed Food Division, Food Agency; and Shigeru Kajiwara, Chief, Operations Section, Commercial Feed Division, Livestock Bureau, Japan.

Barley, together with rice and wheat, are the three grains under the control of the Government of Japan. The Food Agency of the Ministry of Agriculture, Forestry and Fisheries (MAFF) controls the importations of barley and wheat and the purchase of domestic barley.

Of the approximately 380,000 MT of barley produced in Japan, the vast majority is used for malting and for food. Essentially all of the imported barley is for feed use. The vast majority of imported barley is sold by the Food Agency to licensed processors who roll or grind the barley for eventual sale as a single ingredient to beef and dairy producers. A relatively small volume of barley is used in manufactured food.

The Livestock Bureau of MAFF has the responsibility of determining the volume of feed barley that will be required. They, in turn, advise the Food Agency which is

responsible for tendering for the barley to be imported. Canada and Australia traditionally are the major suppliers. In Japan Fiscal Year 1983, the total imports amounted to 1,562,000 MT, of which 305,000 MT was of U.S. origin. The market share was 19.5%.

In addition to barley imports, Japan imports approximately 550,000 MT of 2-row barley malt, with Australia the leading supplier.

The goal of this Japanese Government Barley Mission is to become acquainted with U.S. barley production, storage and transportation. They will become better informed of the availability of supplies and of the interest of U.S. producers to gain a larger market share of the Japan market. In addition, the mission will learn of new varieties of barley and the practicality of using barley as a major feed grain in mixed feeds for all species of livestock poultry.



# Sweet Corn and Popcorn Silage For Dairy Cattle

by G.D. Marx

University of Minnesota, Crookston



Hybrid field dent corn has been a traditional crop for making silage, however, the 1983 government Farm Program made sweet corn and popcorn a

viable alternative to dent corn. Since little information was known about the feeding value of sweet corn and popcorn silage, a nutritional evaluation trial was designed and conducted at the Northwest Experiment Station, Crookston.

In this experiment, 13 acres each of a late-maturing hybrid popcorn and a medium-maturity sweet corn hybrid were planted and harvested for silage. Seed is expensive and yields of these types of corn are often variable depending on variety. Accurate yields at Crookston were not determined since large areas in the fields were flattened by a severe wind several days prior to harvest and considerable harvest loss prevailed. The stalk strength of these tall varieties of popcorn and sweet corn were rather weak when compared to the regular dent corn varieties grown, however, sufficient quantities were harvested for the feeding trials.

Twenty-six yearling dairy heifers and 30 growing dairy steers were paired and equally lotted and fed either popcorn or sweet corn silage for a period of four months. The steers were fed silage to appetite and received 8 lbs. of barley/head daily along with trace mineral salt and dicalcium phosphate. The heifers received 6 lbs. of alfalfa haylage daily, an ad libitum feeding of either popcorn or sweet corn silage. Average daily gains of

dairy steers on popcorn were 2.43 lbs. and on sweet corn 2.48 lbs. daily. Dairy yearling heifers gained 1.56 lbs. on popcorn silage and 1.71 lbs. average daily gain on sweet corn silage. These are respectable gains for both Holstein steers and replacement dairy heifers. Feed intake of animals fed sweet corn were nearly identical to those fed popcorn silage.

The popcorn and sweet corn silage fermented and preserved well at moistures ensiled (59.6% in sweet corn and 63.4% in popcorn). Energy and total digestible nutrients of both sweet corn and popcorn silages were slightly inferior to conventional dent corn silage. Crude protein and fat content were similar between sweet corn and popcorn and slightly higher than field corn.

In conclusion, popcorn and sweet corn should be planted for silage only under special circumstances as was the case afforded by the 1983 Farm Program. Satisfactory growth rates, feed palatability and intakes were experienced with both dairy heifers and dairy steers fed either sweet corn or popcorn silage. The field standability of both popcorn and sweet corn was a problem and lodging losses were excessive and made harvest difficult. Selection of different hybrids may alleviate these problems.

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