

## CHANGES IN ANIMAL SCIENCE DEPARTMENT

Dan Brown, Assistant Animal Scientist

By the time you read this the last of the mature dairy herd will have been loaded on the truck, the milk machines will have been removed and the lights turned off at the North Central Experiment Station Dairy Research barn. The decision to phase out the dairy program which has been an integral part of North Central since its inception in 1896, was made some time ago. The sale of the milking herd waited for the completion of the past two-year pasture study. The remaining heifers will be sold after breeding.

Consolidation of animal herds across the University of Minnesota Agricultural Experiment Stations, reallocation and budget cuts brought about the need to reduce the number of animal species at each station. The North Central dairy herd was selected to go due to labor intensive facilities and the interest and ability of the other dairy facilities throughout the University to increase their dairy research efforts. Once these other herds are in full swing, the number of dairy animals within the University system will be greater than current numbers.

The dairy cow research conducted elsewhere and the forage programs at North Central will continue to serve the needs of dairy producers in this region.

Changes in animal science research at the North Central Experiment Station involve more than dairy. Our beef herd has undergone a complete "dye job." The crossbred herd started in 1972 has been replaced by the purebred Angus herd from the Rosemount Experiment Station. A single breed cow herd will be easier to conduct studies with; the breed variation between cows in the old herd presented a statistical problem, among others. The transfer of this herd and the sale of the Shorthorn herd at Morris will make the herd at North Central the only cow/calf herd in the experiment station system.

The size of our new herd will grow as facilities and land are developed at the site south of Grand Rapids. This more uniform herd will increase the quality of research as we investigate forage utilization and production systems.

While there are reservations in seeing the dairy cattle, which required such close contact, and one of the best



commercial beef herds dispersed, there is anticipation for the quality of research that can be accomplished with larger herds at all stations.

The remainder of the Animal Science program here, swine and alternative animal enterprises, continue with the same commitment as in the past. Change is inevitable and this change which allows us to focus on fewer species with larger numbers at each branch experiment station will benefit all livestock producers.

## BEEF COW CONDITION SCORE MANAGEMENT

Dan Brown, Assistant Animal Scientist

Body condition of beef cows at calving has been shown to influence calf vigor, milk production, cow health and subsequent reproductive efficiency. Evaluating the condition score of cattle is easily accomplished; but formulating rations for maintenance or proper condition gain can be difficult and the resulting feed program is often assumed to be costly. A herd kept as one group throughout the gestation period is typically fed to meet the requirements of the average animal causing the highly conditioned cows to be overfed and lower scoring cows to not receive adequate energy for optimum condition at calving.

Condition score management needs to be addressed to optimize the productivity of each cow and minimize feed costs. A study was conducted at North Central Experiment Station to observe

Table 1. Daily Nutrient Level, Body Condition and Weight of Condition Scores Groups

	DMI, lb	TDN, lb	\$/day	Score Avg, 11/25	Score Avg, 3/13	Score Change	Avg Wt, 11/25	Avg Wt, 3/13	Gain
HCS	31.29	17.90	1.24	6.125	6.083	-.042	1446.3	1619.7	173.4
MCS	35.36	21.34	1.42	5.23	5.28	+.054	1292.5	1501.2	208.7
LCS	41.81	26.60	1.61	4.44	5.11	+.667	1213.8	1534.2	320.4

the effect of noncalculated feed programs on condition scores and feed costs. Rather than calculate an exact ration for each group, cows were fed in a manner we felt comparable to a typical herd.

The herd was divided at mid-gestation by condition score into three groups; High Condition Score (HCS), scores 6 and over; Low Condition Score (LCS), scores 4.5 and below; and Mixed Condition Score (MCS), scores of 4 to

6.5 representing a typical herd. The MCS group was used as a control and fed as we have fed wintering cattle at the station for many years. The remaining two groups were fed a variation from this normal program; HCS cows received less, LCS cows received more. The amount of variation from the control was not pre-set.

At the onset of the calving season all cows were condition scored again to see the results of this feeding program.

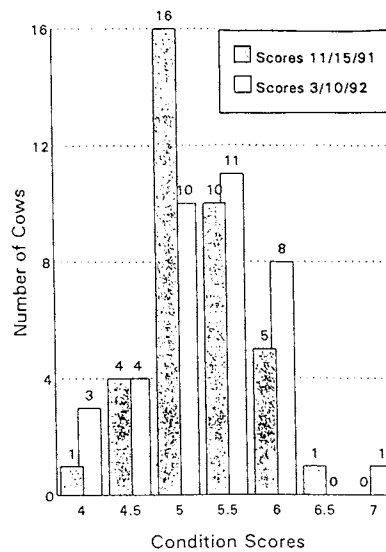
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The actual nutrient levels of the various rations were also calculated at this time. The results are shown in Table 1. From the table you can see that there was a large difference in the energy values presented to the groups. This difference in energy also affected the condition score of the LCS animals.

The MCS group which represented the condition score makeup of many herds is displayed in Figure 1. While there was little change in the average, the condition score spread was widened. High conditioned cows at the onset of the feeding period increased in score value prior to calving, while thin cows scored lower during the same period. This points out the need to manage individual cows for condition score if you expect each to perform at optimum efficiency.

A pre-calving condition score of 5 to 5.5 can be achieved by feeding variations from a herd maintenance level. Figure 2 shows the energy levels required by each condition score to become a 5 in the NCES herd. The variation from the 100% level can be accomplished by amount of feed or nutrient density of rations. The curve will vary for each herd depending upon maintenance requirements, facilities, efficiency levels and length of feeding

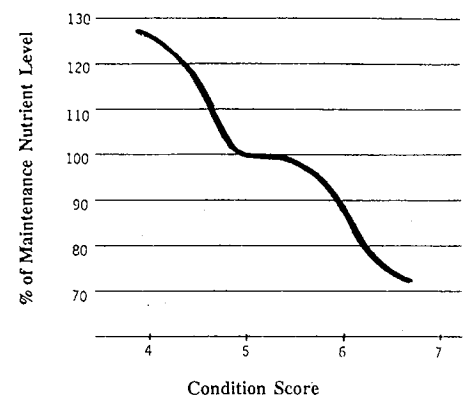
FIGURE 1. Condition Scores for MCS Group Before and After 70 Day Feeding Period



period. Simple variations from a herd maintenance level resulted in alterations in the condition score without increasing the overall feed cost for the herd. The average feed costs for the HCS and LCS groups, on a per animal basis, was the same as the cost for the MCS cows.

To implement this type of feeding

FIGURE 2. Estimated Nutritional Requirement of Maintenance to Bring Cow to Condition Score 5.



program a maintenance requirement for your herd needs to be known. Then the decision to manage condition scores during the gestation period can be based on facilities and your own management expectations. Fine tuning of rations by calculation is still the best way to make sure your herd receives proper nutrition and to control feed costs. Lack of calculation capability is not a reason to avoid condition score management of your herd. The benefits far out-weigh the effort.

## GAMBLING, GAMING, AND TOURISM: WHATS UP?

Dan Erkkila, Tourism & Travel Specialist

You'd have to have had your head in a **minnow bucket** these days not to be aware of the growth of Minnesota gambling. For clarity, we have four major gambling activities: lottery, charitable gambling (like pull tabs and bingo), casino-style gaming, and pari-mutuel racing. Perhaps you do it yourself or know someone who does. In either case, you certainly have been exposed to it through the media. What we actually know about the gambling industry in Minnesota may not be great, but at least the level of information is growing, thanks in part to four studies conducted this year: Minnesota Planning's *High Stakes: Gambling in Minnesota*; a KPMG Peat Marwick study for the Minnesota Indian Gaming Association entitled *Economic Benefits of Tribal Gaming in Minnesota*; the *Southwest Minnesota Gambling Survey* (a joint project of the University of Minnesota - MN Extension Service, Southwest State University, and Project Turnabout); and a study conducted by the University of Minnesota's Center for Urban and Regional Affairs (CURA).

According to Minnesota Planning's *High Stakes*, gambling in Minnesota was

a \$2.5 billion industry in 1991-- nearly the size of the state's eating and drinking establishments. Gross sales of \$558 per capita places Minnesota 4th among states. As a growth industry, it is the Tribal gaming that has exploded. Otherwise, charitable gambling dropped, lottery sales flattened out, and horse racing at Canterbury Downs declined for the 4th out of the last five years. The University's CURA report (on a statistically representative sample of residents throughout Minnesota) suggests that among all Minnesotans, 56-percent have done at least one of the four legal gambling activities in the last year (21-percent of the surveyed Minnesotans have done casino gaming). For the most part, CURA's study paints a picture of Minnesotans as betting on only a few activities and in relatively small amounts (no demographic group averaged over \$20 in an average month). So what's the fuss?

In contrast to the development of Las Vegas, for example, which was literally built out of nothing but desert, Minnesota's casinos were seemingly "plunked down" into an existing tourism (economic) system -- complete (for the

most part) with an operational infrastructure of roads, facilities and services, and clients. Existing businesses literally woke- up to find a new "kid" on the block. Now, there are actually 14+ new kids (casinos). Further, these new businesses play a different game, (legally) play by somewhat different rules, yet attract many of the same clients. From an economic point of view, what do we know about them?

The Peat Marwick study on Tribal gaming says that of the six casinos in the study, \$54 million in proceeds (after payouts and expenses) was available in 1991 to be "... used for purposes consistent with the National Indian Gaming Regulatory Act of 1988." These included funding Tribal government, providing for the general welfare of the tribe, promotion of economic development, contribution to charity, and provision of funding for local agency operations. Their economic impacts have been big and are growing. For example (and contrary to the opinion of some), non-Indians have benefited from 80-percent of the more than 4,700 new jobs reported in the six casinos studied. AFDC payments in the four non-urban counties

with Tribal gaming dropped by 16-percent during 1990-1991 while state-wide figures showed AFDC recipient increases of 15-percent. At the national Travel & Tourism Research Association conference held in Minneapolis this June, Ms. Allene Ross expanded on what they have done in the Prior Lake area. A vice-president at the Little Six "Mystic Lake" casino run by the Shakopee Mdewakanton Sioux Community, Ms. Ross told a large audience that Little Six has put \$2 million in a sewer and water project, \$1.5 in housing, funded local community services, has indeed made large contributions to local charity, and is on the road to self-sufficiency.

Representatives of the hospitality industry, specifically the Minnesota Restaurant, Hotel, and Resort Associations, have made clear their concerns regarding casinos entering the restaurant and lodging business. In parts of the state it is alleged that the casino's have an unfair (economic) advantage wherein they can lure customers to their site offering below-cost meals and/or rooms and more than make up losses by gaming income. The hospitality industry also has concerns about the casino's unknown impact on the public's discretionary entertainment dollar, fearing

consumer shifts in spending from traditional Minnesota entertainment to reservation gambling. This segment of the Minnesota tourism industry appears to be preparing to "level the playing field" with a legislative proposal and lobbying effort to legalize video lottery machines (a computerized version of pull-tabs) statewide.

In summary, at least four things are clear:

- Gaming in Minnesota (and nationally) will become an even hotter public policy issue in 1992-1993 than it has to date.

- Economic prosperity benefits us all. New jobs and reduced AFDC payments are examples of healthy indicators we will be watching for to overturn downward rural trends that are both rural and urban concerns.

- In this case, economic gains do come with social losses, like the **Southwest Minnesota Gambling Survey's** portrayal of the incidence of probable pathological gambling (addiction). These social "losses" are relevant to the debate and cannot be separated from economic or business decisions. It doesn't make the job easy, as research indicates, that Tribal gaming is giving Indian peoples self-sufficiency, enhancing cultural

pride, and giving non-Indians jobs on the one hand, but is potentially creating a large social-services problem on the other. This dilemma belies the rocky road ahead for our state and especially our elected leaders as they muddling through a very complicated issue.

- We still don't know nearly enough as we should about Minnesota's gaming phenomenon relative to tourism. The University's CURA report says casino gamblers are more likely to be older, married without children at home and Republican! But what about the others and what does this user profile mean in terms of how the tourism industry should market Minnesota products? And what is the profile of the visitors coming into Minnesota from other states, countries? More research is needed, more facts to help all of us understand this new industry as it relates to all facets of our businesses -- and lives. The University of Minnesota's Tourism Center and faculty at Duluth are helping by currently looking at the tourist or travelers' use of discretionary income for gambling over more traditional recreational activities. Where this will all shake out is yet to be seen. If you're a **betting** person, the odds are in favor of a drawn-out debate!

## NEWS FROM NORTH CENTRAL

*David L. Rabas*

Dairy cattle have been a part of the North Central Experiment Station from the time our station was founded ninety six years ago. Breeding improvements began in 1904 when Superintendent A. J. McGuire purchased the first purebred Guernsey bull. In 1917 Superintendent O. I. Berg purchased four Guernsey heifers to be used as foundation females to build a herd. In 1941 all the non purebred cattle were sold and the current purebred herd was established. In 1982 additional purebred Guernseys including some descendents from the Northeast Experiment Station herd at Duluth joined our purebred herd. Production increased from a herd average of 196 pounds of butterfat in 1905 to over 650 pounds today.

With all this history it was not without some amount of loss many of us felt as the last Guernsey cow left our station on Thursday, November 5. Some heifers and calves remain to be sold as bred heifers in the spring and fall of 1993 but last Thursday was the last milking and the end of ninety six years of dairy research at our station. Many of our alumni of the School of Agriculture will remember our dairy herd and dairy

herdsmen. I'm certain that as Archie Johnson, long time dairy herdsman, reads this he will think back over the many contributions our dairy research program has made to the dairy industry. He will remember those pioneer days in which the station helped bring artificial insemination to Minnesota dairy farms. He and others will remember the good times and the good friends which were part of our station's dairy research history.

The end of nearly a century of dairy research cannot easily be forgotten and it will not. As scientists however we need to move on to new and perhaps greater challenges. With the departure of the dairy herd we also witnessed the arrival of the Angus beef herd from Rosemount. This initial herd of one hundred and fifteen animals will eventually grow to a two hundred cow research herd. This herd will be the only beef cow/calf research herd in the University of Minnesota system. We look forward to planning and implementing an extensive beef/forage research program. The land at the south farm has been cleared and we are moving forward with plans to develop a beef/forage research center

at that site.

We will continue to maintain our extensive small plot forage research program and will be using this information to develop a coordinated beef/forage research system. As soon as funds for a position are released we will begin a search to find an animal scientist with the appropriate beef cow calf and forage research training and experience.

The switch in research emphasis from dairy to beef does not mean that we intend to neglect our dairy farmer clients. The dairy industry in Minnesota is largely forage based. We will continue to maintain our forage research emphasis in Agronomy and expect that through a coordinated forage/livestock research program we can provide better answers to all livestock producers.

One of the most enjoyable jobs I have as station superintendent is to recognize staff who have made an exceptional contribution to our North Central Experiment Station. In this issue of the *Quarterly* I would like to recognize three very special people. Marian Mutchler and Carolyn Frings have given over

*continued on last page*

# ALUMNI NEWS

Tom Carpenter

## NEWS FROM NORTH CENTRAL *continued*

twenty five years of productive and dedicated service to the North Central Experiment Station. As superintendent my job would be very difficult to do without them.

Marian first joined our station staff in 1957. She left in 1963 and rejoined our staff from 1973 to the present. She works as an accounts specialist and does an especially fine job of looking after the budget, accounts, purchases and employee timecards and other records.

Carolyn first joined the station staff in 1958. She left in 1961 and rejoined our staff from 1970 to the present. She has served as secretary to our research staff and to four superintendents. In her current classification as an executive secretary, she like all good superintendents' secretaries lets me run the station when I'm around.

Both of these employees deserve a special thank you from me for jobs well done and I hope they both will continue to be with us at least until I retire.

The third individual to be recognized in this *Quarterly* is Russell Mathison. Russ is this year's recipient of the "Outstanding Civil Service Award." This award is given to civil service employees who demonstrate innovation and initiative in their work and who have provided excellence in areas above and beyond their normal duties and assignments. Russell received a Bachelor of Science degree in biology from Moorhead State University in 1974. He began his employment as a research plot technician at North Dakota State University in 1975 and joined the University of Minnesota at St. Paul in a similar position in 1989. He became part of our research staff in 1980 as a junior scientist in agronomy. In 1989 he received a Master of Science degree from the University of Minnesota. Russell advanced to the rank of senior scientist and since I became superintendent in April of 1991, he has directed the agronomy research program. For his efforts to improve professionally and for

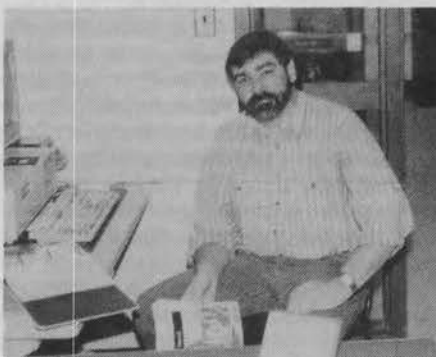
continuing to provide excellence in the agronomy research program above and beyond his normal duties and assignments, Russell Mathison is most deserving of this outstanding civil service award.



Dave Rabas and Marian Mutchler



Carolyn Frings and Superintendent Rabas



Russell Mathison

It's that time of year again, we are busy putting equipment away, clearing out the horticulture area, getting ready for winter. At the time I am writing this article there are about 6 inches of snow on the ground.

In September, Dr. Thurl and Mrs. Ruth Metzger from Little Rock, Arkansas, stopped by. They asked the whereabouts of Lew Reese, Don Dailey, Woodrow Allen and others. I told them where everyone was, sure hope they are able to find you.

The form for the North Central School flagpole monument is done. I'm hoping the maintenance crew will get the plaque up before the snow gets too deep. The memorial reads "U of M, North Central School of Agriculture Flagpole, 1925 to 1965, Reinstated by the Alumni Association in 1992." Thanks to all the alumni who donated toward keeping the memory of North Central School around.

Chester Gauper, Class of 1933, died on June 22, 1992. Chet graduated from the University of Minnesota, taught biology in the Coleraine, MN, high school and was a veteran of WW II. He is survived by his wife LaVerne in Coleraine; one son Allen; three daughters, Lynn Olds, Marilee Gustafson and Lorna Mix; two brothers, three sisters and seven grandchildren. Tom Spolarich, Class of 1948, died Thursday, October 15, 1992 in his Eveleth, MN home. He worked at U.S. Steel Mintac plant for 33 years. Survivors are his wife Rita, a son Roger and two sisters.

Our sympathy is extended to the families of these alumni.

Congratulations to Walt (Class of 1944) and Bobbie Lou Johnson who celebrated their 45th wedding anniversary this summer.

I would like to hear some news from all you snowbirds this winter so I can pass it on to the rest of the alumni.

### COMING EVENTS

Beef Cow/Calf Meeting - First week in February 1993

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DR. DAVID L. RABAS  
Superintendent

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