The 55th annual North Carolina Dairy Conference is scheduled for this coming February 16, 2006 at the Holiday Inn in Salisbury, NC. On-site registration starts at 8:30 a.m., and the first presentation will convene at 10:00 a.m. with SUDIA personnel giving their annual report of the association’s activities. The support of the conference by several dairy industry businesses that will have exhibits of their products and services is greatly appreciated.

The featured speakers at the conference will be two dairy professionals who are known by many within the North Carolina dairy industry. Dr. Greg Bethard, who is with G&R Dairy Consulting, will be the luncheon speaker. He will be discussing his perspective on what the Southeast dairy industry will be like in ten years. The keynote afternoon presentation will be given by Dr. Thomas Bailey, DVM. Dr. Bailey is the lead technical services representative with Monsanto’s Decisive semen program. He will discuss using sorted semen in a herd’s A.I. breeding program. Both presentations should be of considerable interest to dairy producers.

Also of interest to the conference attendees should be the brief dairy research reports that will be given by NCSU faculty from the Department of Animal Science and the College of Veterinary Medicine. Those reports will include take-home application suggestions. The annual dairy conference would not be complete without a presentation on the milk market outlook for 2006. Dr. Geoff Benson, Extension Ag Economist from NCSU, will gaze into his crystal ball and offer those predictions.

Meetings of other dairy groups are scheduled for the afternoon and evening of February 15th. The Dairy Foods Safety and Quality Conference, a program organized by Dr. John Rushing from NCSU, will occur from 1:00-5:00 p.m. From 2:00-5:00 p.m. the NC Dairy Youth Foundation Board will meet, and at the same time the NC ADA/SUDIA Board will have their annual meeting. At 7:00 p.m. that evening the NC Dairy Producers Association will hold their 11th annual meeting. All producers are encouraged to attend that meeting and be a member of the association that represents dairy producers in the state.

A conference brochure and registration form will be either e-mailed or surface mailed to producers and industry representatives in January. Plan now to attend this annual event.
NOTICE about Newsletter Delivery Method

The NC Dairy Producers Association has generously agreed to pay for the printing and mailing expenses for the four Dairy Extension Newsletters we will produce this fiscal year. We greatly appreciate that support. To reduce those printing and mailing expenses, we would like to deliver as many newsletters as possible via e-mail. If you are receiving a printed copy of this newsletter and would be willing to receive e-mail copies instead, would you please send your e-mail address to donald_pritchard@ncsu.edu with a note indicating so. Thank you.

North Carolina Youth Participate in the 2005 National 4-H Dairy Youth Conference

Dr. Brinton Hopkins  
NCSU Extension Dairy Specialist

Congratulations to the following youth for being selected, through an application and interview process, to attend the National 4-H Dairy Conference: Erin Morgan (Forsyth County), Kerri Beth Frazier (Randolph County) and John Hoffner (Rowan County). Youth from across the United States and certain provinces of Canada participated in this educational conference that was held at the University of Wisconsin-Madison during World Dairy Expo. Funding for our youth to attend this conference was generously provided by the North Carolina Dairy Youth Foundation. Dr. Brinton Hopkins, Extension Dairy Specialist and Melissa Staebner, Yadkin County 4-H Agent, accompanied the youth to this conference.

At the conference, youth participated in many outstanding educational sessions and seminars on the University of Wisconsin-Madison campus and visited several dairy farms, a commercial dairy heifer grower farm, ABS headquarters and the World Dairy Expo. They also toured the Hoard’s Dairyman Farm, Hoard’s Dairyman publishing company, the National Dairy Shrine and NASCO.

2005 State 4-H Dairy Judging Teams Compete at Contests in Pennsylvania, Wisconsin and Kentucky

Dr. Brinton Hopkins  
NCSU Extension Dairy Specialist

North Carolina State 4-H Dairy Judging Team:  
Congratulations to the 2005 North Carolina State 4-H Dairy Judging Team for an outstanding judging season. Team members were: Megan Mann (Alamance County); Brittany Thompson (Alamance County); Brenda Crouse (Alleghany County) and Aaron McCain (Randolph County). Dr. Brinton Hopkins (Extension Dairy Specialist), Ken Vaughn (County Extension Director in Iredell County), and J. D. Brooks (volunteer from Alleghany County) served as coaches. Primary funding for the team to travel and compete was
generously provided by the North Carolina Dairy Youth Foundation.

**North Carolina 4-H Places 8th at Pennsylvania Contest:**

Our team placed 8th overall in the Pennsylvania Youth Dairy Cattle Judging Contest held in Harrisburg, PA. North Carolina won 1st place in the Jersey breed, placed 5th in the Holstein breed, and 5th in the Linear Evaluation part of the contest. On an individual basis, Megan Mann placed 3rd in the Jersey breed and was the 10th high overall individual in the contest.

On the trip to Harrisburg, the team visited the Gettysburg battlefield and the North Carolina memorial. The team also had a great time touring Hershey, PA and the Amish area in Lancaster County, PA.

**North Carolina Places 15th at the National 4-H Dairy Judging Contest held at the World Dairy Expo in Madison, Wisconsin:**

Next, the team traveled to Madison, Wisconsin and competed at the National 4-H Dairy Judging Contest held at the World Dairy Expo. Our team did a great job placing 15th in total overall score and 14th in total reasons score out of 28 U.S. teams.

In the Guernsey breed, the team placed 3rd in the contest with Brittany Thompson placing 5th high individual. In the Brown Swiss breed, the team placed 5th overall in the contest, with Aaron McCain placing 17th and Megan Mann placing 23rd on an individual basis. Our team placed 12th in the Holstein breed, 18th in the Ayrshire breed and 23rd in the Jersey breed. Brittany Thompson also placed 16th in total reasons score for the contest.

On Saturday before the contest, our North Carolina State 4-H Team and North Carolina State Collegiate Team traveled together to practice judging sessions at Daltondale Ayrshires in Hartland, WI; Vilter Guernseys in Hartland, WI; Agnew Farm in Oconomowoc, WI and Crescentmead Holsteins in Ixonia, WI. On the day before the contest, the teams had a great time participating with the other teams in touring dairy sites in Fort Atkinson, Wisconsin including NASCO, the Dairy Shrine, and the Hoard’s Dairyman Farm. They also participated in judging practice sessions at Sunshine Genetics, Inc. in Whitewater, Wisconsin and Barlass Jersey Farm in Janesville, Wisconsin. On the day following the contest, the teams visited World Dairy Expo where they saw hundreds of dairy exhibits as well as some of the finest dairy cattle and dairy shows in the world.

From left to right: J.D. Brooks (volunteer coach from Alleghany County); Megan Mann (Alamance County); Brittany Thompson (Alamance County); Brenda Crouse (Alleghany County); Aaron McCain (Randolph County); and Robin Mann (volunteer coach from Alamance County).

**North Carolina Alternate State 4-H Dairy Judging Team:**

Congratulations to the Alternate State 4-H Dairy Judging Team who competed at the North American Dairy Judging Contest in Louisville, Kentucky. Team members were Carrie Hoffner (Rowan County), Tyler Bussard (Rowan County), Hillary Robinson (Rowan County) and Kerri Beth Frazier (Randolph County). The team was coached by David Correll (volunteer and coach of the Rowan County Team), Ken Vaughn (County Extension Director in Iredell County), and J. D. Brooks (volunteer from Alleghany County). Primary funding for this team to travel and compete was generously provided by the North Carolina Dairy Youth Foundation. We also appreciate
the support of the Rowan County Holstein Association and Rowan County Extension for use of the van to transport the team.

The team did a great job placing 12th overall and 10th in reasons. The team also placed 6th in Jerseys, 7th in Holsteins and 11th in Guernseys. Individually, Tyler Bussard was 13th and Kerri Beth Frazier was 17th high individual in reasons. Tyler also placed 3rd in Jerseys and 13th in Holsteins as well as 14th high individual overall in the contest.

Left to right: David Correll (volunteer coach from Rowan County); Tyler Bussard (Rowan County); Hillary Robinson (Rowan County); Carrie Hoffner (Rowan County); Kerri Bet Frazier (Randolph County); and J.D. Brooks (volunteer coach from Alleghany County).

**North Carolina State University Dairy Judging Team Competes**

North Carolina State University was proud to have a tremendous group of students represent the University at the three national dairy judging competitions this fall. The students on the team were Justin Hardin, Jesse Ledbetter, Jason Wright, and Van Proctor. The team, coached by Dr. Mitch Hockett, competed at Harrisburg, PA, Madison, WI, and Louisville, KY. Their best showing of the year was at Louisville, where the team was second high team in Holsteins, fourth high team in Jerseys and tenth high team in reasons out of eighteen teams. Thanks go out to these young men for their time and hard work and for representing their University so well.

Left to right: Justin Hardin, Jason Wright, Van Proctor, Jesse Ledbetter, and Dr. Mitch Hockett, coach.
Dr. Steve Washburn  
NCSU Extension Dairy Specialist

In 2003, the Animal Improvement Programs Laboratory of USDA added daughter pregnancy rate (DPR) to traits available for genetic evaluation of dairy bulls. Incorporation of DPR in selection should be beneficial in slowing and possibly reversing the marked decline in U.S. dairy cow fertility observed in the past 25 years. However, it took many years for cow fertility to drift so low and improvement will be slow because heritability of DPR is only about 4% (0.04) in contrast to higher heritability for production. Currently, DPR has a weighting of 7% of the selection index, Net Merit for dollars (NM$).

Daughter pregnancy rate is based on relative proportions of a bull’s daughters that conceive within comparable 21-day breeding periods and is related to days open, i.e. time from calving until conception. Days open and DPR are comprehensive measures of fertility that incorporate time to first breeding, length of breeding period, and conception rates among cows. Selection for a comprehensive trait such as DPR likely gives a different result than selection for conception alone as discussed below.

Evidence of effects of relatively narrow emphasis on selection for fertility comes from the dairy industry in Norway. Andersen-Ranberg et al. reported on heritabilities, genetic correlations, and genetic change for female fertility and protein yield in Norwegian dairy cattle (J. Dairy Sci. 88: 348-355). They reported on non-return rates for heifers and cows at 56 days after first insemination. Non-return rates are higher than actual conception data based on palpation but conception and non-return rates are highly correlated. Data included 1,815,581 first insemination records from virgin heifers and first lactation cows that were daughters of 2,697 Norwegian dairy sires.

Selection for non return in Norwegian dairy heifers, using a total merit index resulted in small but desirable genetic progress for non-return rate in yearling heifers. Non return was about 73% in 1980 and increased to nearly 75% in 1997, an annual change of +0.14 percentage units. Selection for non-return rate also genetically stabilized non return in first-lactation cows. Among first lactation cows, the non-return rate in 1980 was just under 66% and changed only slightly to just over 68% by 1997, an annual change of +0.03 percentage units per year. From the Norwegian data, selection pressure on non-return rates results in either stable or slightly improved reproduction over many years even with heritability estimates of only about 1% for non-return rates in that population.

However, because intervals to first breeding were not included in the Norwegian selection program, an increase of 0.11 days per year in intervals from calving to first insemination was observed among first lactation cows as milk protein yields increased by 1.39 pounds/cow per year. This implies that daughters of some bulls were slower to start cycling again after calving. Therefore, Andersen-Ranberg et al. (2005) concluded that intervals from calving to first insemination during first lactation should be included in the fertility index to prevent further increases in intervals to first insemination.

Fortunately, DPR does account for differences in daughters of bulls for intervals to first service after calving. Although milk and protein yields are genetically antagonistic to cow fertility, the use of daughter pregnancy rate in selection programs should allow for increased production while maintaining cow fertility in the long run.

Improving Genetics of Fertility in Dairy Cattle
A look back at 2005
Overall, the supply-demand balance eased somewhat compared to 2004 and farm prices have been lower as a consequence. The average US All Milk price was $16.05 per 100 lb. in 2004 and current USDA projections are that it will likely fall to an average of $15.20 (mid-point of the range) in 2005, down 85 cents per 100 lb. Federal Order prices are likely to track national price trends with an average blend price for 2005 of close to $16.20 for the base zone of the Appalachian Order (FO 5). Mailbox prices typically track these changes but dairy cooperatives had additional marketing challenges this year because of hurricane caused disruptions to supplies and the effects of higher energy prices on transportation costs.

Two years of good prices have certainly helped dairymen recover from the losses they suffered because of low prices in 2002 and 2003. A healthy economy and strong sales helped offset strong growth in milk production. Compared to the long run trend in cow numbers—down—there was some growth in the national dairy herd in 2004 and steady increases in cow numbers in 2005. More cows, along with increasing milk production per cow, means total milk production will be up around 3.6% in 2005. This growth has occurred despite two rounds of herd reductions under the CWT voluntary supply management program. Commercial use of dairy products is expected to be up about 2.2% over 2004, and exports of milk powder have been strong as a result of tight world markets and a weaker dollar. However, all-in-all, milk prices held up quite well relative to the record high milk prices in 2004.

Federal Dairy Policy
Dairy policy is getting a lot of attention at present as efforts are made to extend the Milk Income Loss Contract (MILC) program. Authorization for this program expired on September 30, 2005. Legislation to renew the program has already passed the Senate but with a reduced payment rate in the formula, 34% instead of 45%, and an additional 2.5% reduction in the actual MILC payments generated. The House did not take any action to renew and the issue will be resolved in conference committee. Milk prices were above the MILC trigger in most of 2005 but that state of affairs is not expected to continue in 2006.

Outlook for 2006
The production outlook for 2006 depends on the balance between several factors that favor higher milk production and some which would discourage it. Factors favoring higher production include low feed costs, milk production per cow that has returned to long term trends, the momentum provided by higher cow numbers, and a July 1 dairy heifer inventory that was 3% above year ago levels. Offsetting factors include strong cull cow prices, Round 3 of the CWT voluntary supply management program and significantly higher energy costs.

USDA projects the US average farm price for corn at $1.80 per bushel (midpoint) for the crop marketing year which began October 1, down 26 cents from the previous year. The average 48% soybean meal price is pegged at $167.50 per ton (midpoint), down $15. However, for North Carolina dairy farmers, increased transportation costs will off-set part of these reductions in farm prices. Nevertheless, the milk-feed price ratio should remain favorable for milk production.

The current CWT herd reduction program is projected to remove approximately 66,000 cows and an estimated 1.2 billion pounds of milk, 0.7% of the milk supply. CWT will also continue to subsidize cheese exports in an effort to support milk prices. To put this in perspective, USDA estimates the
national dairy herd was 36,000 cows larger in October, 2005 than in October 2004, far fewer than CWT intends to remove.

Although the worst of the short-term effects of Hurricanes Katrina and Rita on energy prices are past, significantly higher energy costs are expected to persist through 2006. Higher energy costs have both a direct effect and an indirect effect on farm production costs because most farm inputs have an energy component, particularly nitrogen fertilizer. The US Department of Energy's data show that diesel and natural gas prices have peaked but the forecast for the whole of 2006 is for most energy prices to remain above 2004 and early 2005 levels. Diesel prices, which overtook gasoline prices in 2005 will be about one-third higher than 2004, on average, and will remain at a premium to gasoline in 2006. Natural gas prices also increased sharply in the last half of 2005 (up 40%) and then declined somewhat. For all of 2006, prices are expected to be substantially higher than 2005, up 11% based on USDoE forecasts. Natural gas is the feedstock for ammonia-based nitrogen fertilizers and 2006 crops are expected to be significantly more expensive to plant and harvest.

Higher energy prices will affect the health of the overall economy and consumer discretionary income and purchasing decisions. Butter sales likely will be under pressure as some consumers reduce the amount of food eaten in restaurants and buy cheaper substitutes for home consumption. The impact on sales of other dairy products is less certain but sales will likely grow more slowly than in 2005. Current stocks of cheese and butter are slightly below year ago levels, which is mildly supportive of prices.

USDA’s latest forecast for 2006 is for milk production to increase by 2.6% to 181.5 bil. lb. The midpoint forecast for the US All Milk price is $13.60 per 100 lb., which is $1.80 below 2005. The midpoint Class III forecast is $12.30, down $3.09 per 100 lb. The current Class III futures market presents a slightly less gloomy picture, with Class III prices down about $1.45. If North Carolina prices track national prices as they have in the past, NC dairymen should see prices that are $1.50 to $1.70 lower than in 2005, with an average Federal Order 5 uniform (blend) price of around $14.60 per 100 lb for 3.5% butterfat milk. Monthly prices are expected to be below the MILC payment trigger and payments averaging around $0.25 per 100 lb can be expected if the current Senate proposal to renew the program passes Congress.

These projections are based on “normal” weather and milk production next spring will be critical. An abnormally large spring flush would likely send milk prices lower for the rest of the year but a smaller than expected amount of spring production would have the opposite effect and could send prices higher. Similarly, if the consumer side of the equation is weaker than expected this will translate into weaker prices. Overall, 2006 is shaping up to generate farm prices that are fairly close to long term trends. During the 5-year period from 2000, when Federal Order 5 was created, through 2004, the average minimum blend price was $14.82 per 100 lb. However, these prices will seem quite poor relative to the strong milk prices that have existed since the fall of 2003 even if supplemented by MILC payments.

In light of this outlook, belt-tightening will be necessary and sound financial management practices and judgment will be important. This includes measuring and monitoring financial performance, including cost of production. Contact me if you would like to participate in the NC Dairy Farm Financial Performance Project and, if not, please do take advantage of the information provided on my web page at http://www.ag-econ.ncsu.edu/ faculty/benson/benson.html or similar financial information provided by others.
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