

Maryland's Dairy Industry: 2008

**A Report
To
Governor Martin O'Malley**

From

The Maryland Dairy Industry Oversight and Advisory Council



October 1, 2008

Maryland's dairy industry still at risk

The Maryland Dairy Industry Oversight and Advisory Council is charged with reporting annually to the Governor on strategies to support Maryland's dairy industry. This is the Council's second report since being established in July 2006.

In its first year, the Council focused its work on the significant economic challenges facing Maryland's fluid milk processors and 569 dairy farms. The Council's deliberations resulted in two recommendations in their 2007 report:

1. In light of the ongoing economic challenges facing Maryland dairy farmers, the Dairy Advisory Council recommends the establishment of a Maryland Dairy Emergency Fund at the Maryland Department of Agriculture to provide farmers with financial assistance during periods of economic hardship due to depressed milk prices. To provide the necessary funds for this State function, we recommend \$5 million be appropriated annually to a non-reverting fund and be allowed to build up to, and be maintained, at \$15 million. The Secretary of Agriculture should be authorized to develop a plan to distribute payments from the fund to assist dairy farmers during periods of economic crisis.
2. To support the continued viability of Maryland's fluid milk processors, the Dairy Advisory Council recommends the creation of a law prohibiting the sale of fluid milk products in Maryland at below cost. The Secretary of Agriculture should be provided with the necessary authority and resources to determine the industry cost to process and distribute fluid milk products and the powers to enforce compliance with the law. The cost of administering the program should be paid through assessments on fluid milk processors and distributors doing business in Maryland.

Legislation to implement both of these recommendations was introduced in the 2008 General Assembly. Legislation (HB543, SB 503) to enact the Council's recommendation to create a Maryland Dairy Emergency Trust Fund was passed by the General Assembly and signed into law by Governor Martin O'Malley. The legislation directed the Secretary of Agriculture to establish procedures for dairy farmers to apply for financial assistance from the fund. The Secretary asked the Council's to propose a process by which emergency payments would be made to dairy farmers. The Council's recommendation is included in Attachment 1 of this report.

The 2008 General Assembly also considered legislation, HB 1367 and SB 684, to create a program to enforce a prohibition against selling milk below cost. The legislation did not pass, however, the responsible Committees subsequently asked the Department of Agriculture to prepare an analysis of the law of how a sale below cost law would impact consumer prices. The Department asked Dr. Howard Leathers, UMD to assist with this analysis. His conclusions are included in Attachment 2 of this report.

2008 recommendations

In 2008, the Council identified three issues of concern and recommendations that would be beneficial to the goal of retaining and encouraging a healthy dairy industry:

1. Maryland milk processors continue to be pressured by out of state competitors who exploit an unfair competitive advantage which they derive from operating inside a state regulated milk market.
2. A need for increased research and education extension support for dairy farmers from the University of Maryland's College of Agriculture and Natural Resources.
3. Increasing costs to transport raw milk from the farm to processors, and disparities between Maryland's truck weight regulations for milk haulers and those of other states in the region.

The Council developed three recommendations to address the issues above:

Recommendation 1:

The Maryland General Assembly should enact legislation that prohibits a milk dealer from selling milk below cost; create a right of private action to allow a business to seek recovery of economic losses resulting from the sale of milk below cost; require the parties to first attempt to mediate a dispute related to the sale of milk below cost prior to going to the courts; and establish a milk cost accounting methodology based on generally accepted accounting procedures for purposes of

determining whether a dealer has violated a prohibition against the sale of milk below cost.

The Advisory Council developed this modified recommendation as a means to address the problem of predatory milk pricing without requiring excessive government intervention and the creation of a new regulatory program. As detailed in the Council's 2007 report, Maryland fluid milk processors face aggressive competition from out of state processors who enjoy a competitive advantage by virtue of being located in a state regulated milk market that guarantees a minimum wholesale price. The loss of the fluid milk processing sector would cost thousands of plant jobs and cause many Maryland farmers to have to ship their milk farther at additional cost. The Council members believe the recommendation above would be an effective deterrent to predatory milk pricing without creating expensive and undue regulatory burden.

Recommendation 2: Support University of Maryland College of Agriculture and Natural Resources programs to address dairy industry needs.

The University prepared a report with three key recommendations endorsed by the Council. Those recommendations, detailed in Attachment 3, are

- 1. Develop a Memorandum of Understanding with Pennsylvania State University, Department of Dairy and Animal Science, University Park, to formalize a process to expand dairy educational opportunities of the Maryland dairy industry in their local communities.*** This agreement would also increase the opportunities of faculty at the University of Maryland and Pennsylvania State University to collaborate on new initiatives that capitalize on complementary areas of expertise.

- 2. Create a Center of Dairy Excellence at the University of Maryland, Department of Animal and Avian Sciences, College Park.*** The Center would hire a Dairy Coordinator and this center would be responsible for administering and coordinating two new dairy

initiatives: The Dairy Profit and Target Team Program, and the Dairy Food Safety and On-farm Processing Program. The Center would also serve to administer and coordinate other dairy educational initiatives that are needed to expand the economic opportunities of the Maryland Dairy Industry. Budgetary needs for this recommendation are \$145,000 per year.

3. Enhance dairy research and undergraduate education at the University of Maryland with \$250,000 of new funds. The purpose of these funds would be to support applied dairy research, demonstration projects, and internships for undergraduate students seeking large food animal experience.

Recommendation 3: Maryland state and federal leaders should work with their counterparts in the Mid-Atlantic and Northeast region to establish uniform gross weight limit rules for raw milk haulers on state and federal highways. Gross weight limits in excess of 80,000 pounds should be allowed where reasonable precautions can be taken to address safety concerns. Allowing haulers to transport more milk will reduce truck traffic, fuel consumption, and transportation costs that are ultimately borne by dairy farmers and consumers.

Maryland's dairy farmers, milk processors and consumers rely on the ability of milk haulers in the State to transport milk from farms to milk processing plant. The efficiency of this process is hampered by laws which prevent trucks from carrying more than 80,000 pounds. This problem has become more acute as diesel fuel prices have soared. There is a checkerboard pattern of varying milk truck hauling weight limitations on highways state and federal roads throughout the Northeast. In New York and Maine, for example, gross weight limits are up to 99,000 pounds on some Interstate highways. Elsewhere in the region, milk haulers are limited to 80,000 pound gross weight limits on interstate highways. A number of Northeastern states allow milk haulers to run up to 95,000 pounds on designated state roads. In Maryland, haulers may run up to 85,000 but only in certain areas of the state. When traveling to Maryland milk processing plants on routes to the state's 561 dairy farms, these trucks must carry lighter loads in Maryland. Further

complicating this issue is the seasonality of milk production, with large sways in production coming depending upon feed quality, heat and other factors. All these factors combined increase the cost of transporting milk from the farm to the processors. Because of the regional nature of the milk market, the discrepancy in gross weight limits between states reduces the efficiency of moving the milk from the farm to where it is needed.

State of the dairy industry in 2008

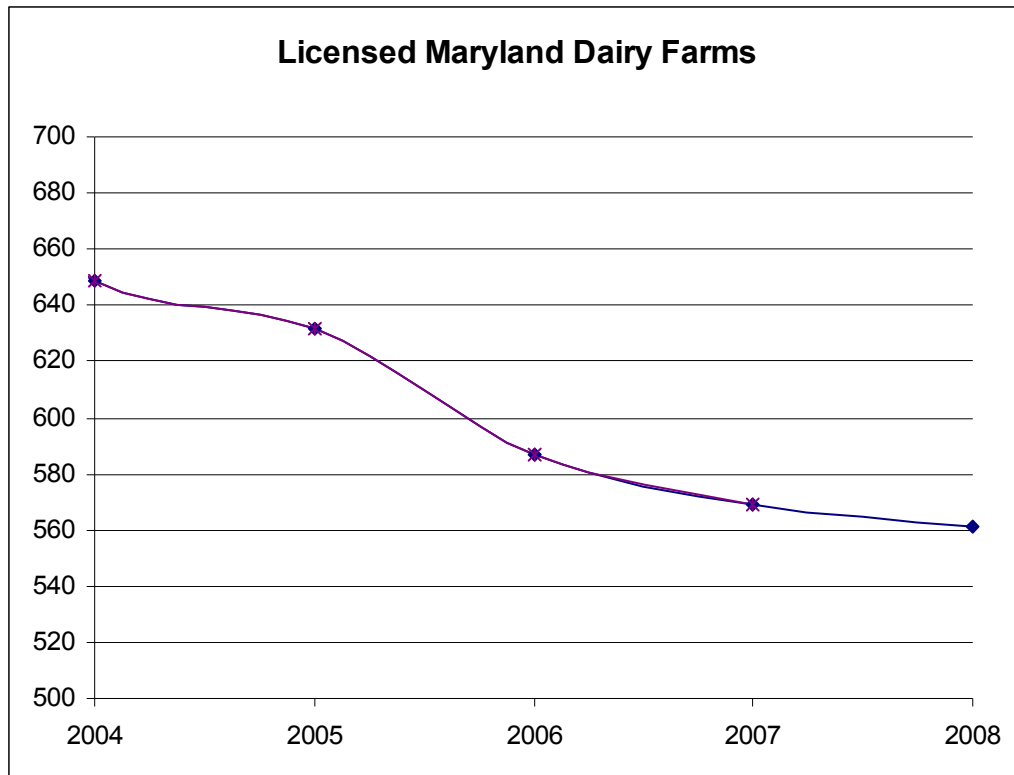
Although profitability of the State's dairy farmers has increased this year with increased milk prices, the cyclical nature of the industry and ongoing trends has not changed since the 2007 report. This leads the Council to reemphasize its recommendations of 2007 to provide a safety net for dairy farmers while leveling the playing field for Maryland milk processors.

Maryland's dairy industry is a vital part of agriculture in the state. Ranked third in farm income behind the poultry and nursery sectors, dairy farmers maintain approximately 250,000 acres of farmland. Dairy is particularly important to the farm economies of Maryland's central and northern counties where farmers have the option of selling their land to developers at ever increasing prices. The economic impact of these farms in their communities is significant – an estimated \$879 million in Maryland. Their social impact is vital as well, with dairy farmers and their families taking active roles in the fiber that sustains many rural Maryland communities. With very few exceptions dairy farms are full time family farms; a rarity in the rapidly changing Maryland landscape.

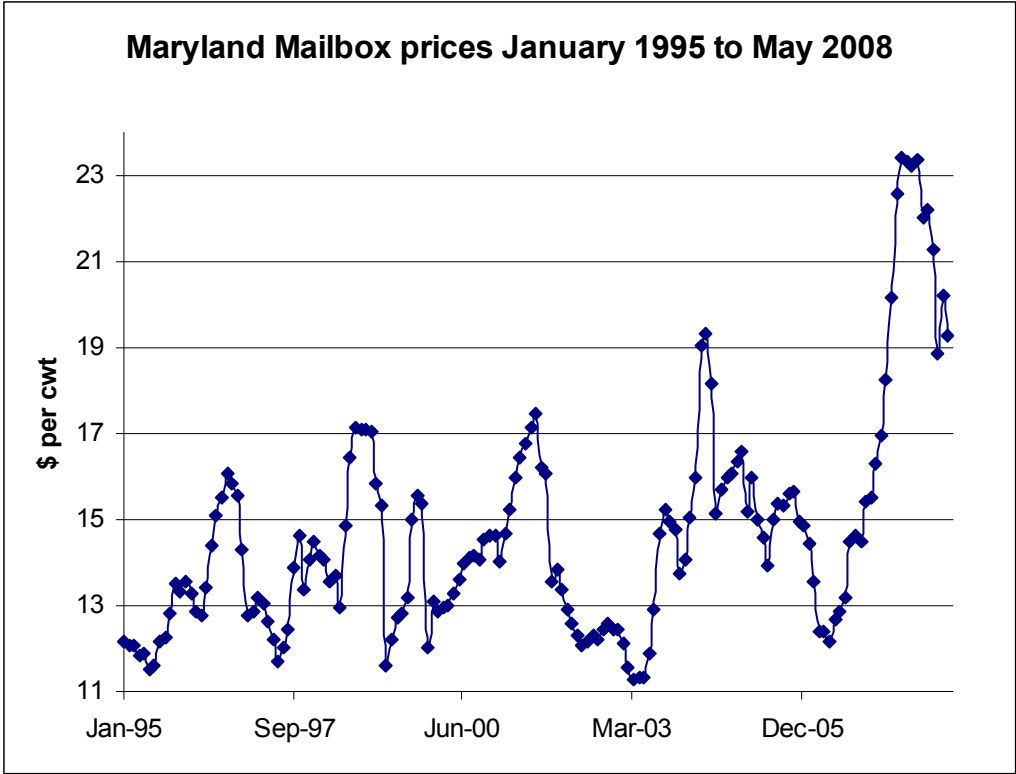
Despite recent increases in the price of milk, which supports the continuance of Maryland dairy farms, there is compelling evidence that the state's producers are at a critical juncture, with their future viability at stake. The number of farms licensed to produce milk declined by more than 35 percent from 1,009 in 1995 to 632 in 2005. From December 2005 to August of 2007, a period of low farm milk prices, the State lost 63 dairy farms, dropping to 569. According to the Department of Health and Mental Hygiene, Maryland lost 8 more dairy farms this year. There now are 561. Dairy farmer

representatives on the Council attribute the decline largely to the insufficient financial returns resulting from extreme price volatility and extended periods of depressed milk prices. The decline of dairy farms is projected to continue based on current trends, with Maryland losing from 100 to 220 dairy farms in the coming decade, according to Dr. Howard Leathers, University of Maryland agricultural economist.

In 2008-2009, the Dairy Advisory Council will continue to monitor Maryland's dairy industry and look for solutions to the industry's many challenges.



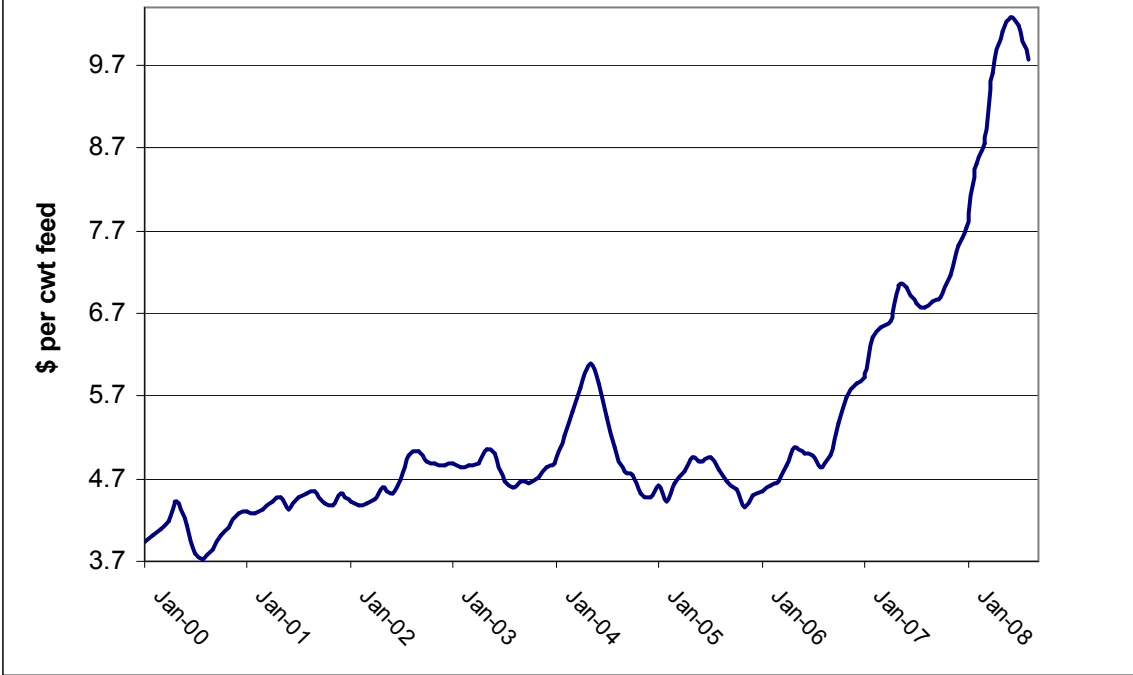
- Source, Department of Health and Mental Hygiene



Source – Dr. Howard Leathers, University of Maryland

(Note: cwt refers to hundredweight, the industry standard measurement for milk. A hundredweight is 11.6 gallons of milk.)

U.S. Dairy Farms Feed Costs January 2000 - August 2008



Source: University of Maryland, Dr. Howard Leathers

Members of the Dairy Advisory Council

Robin Breeding – *Chairman*, Dairy Farmers of America Cooperative
Don Breiner – Land ‘O Lakes Dairy Cooperative
Bob Cooksey - Maryland & Virginia Milk Producers Cooperative
Ralph Kemp – Cloverland-Greenspring Dairy, Baltimore
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Chuck Fry – Dairy farmer, Tuscarora
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Delegate Paul Stull, Frederick
Senator David R. Brinkley, Frederick
S. Patrick McMillan, Assistant Secretary, Maryland Department of Agriculture
Dr. Robert Peters, University of Maryland College of Agriculture and Natural Resources
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Attachments

1. Mechanism for Maryland Dairy Support Payments
2. Potential sell below cost law effects
3. University of Maryland recommendations

Attachment 1

Options for Adjusting a Maryland State Milk Subsidy for Feed Prices.

Howard Leathers, University of Maryland

September 2008

This discusses options for designing a state emergency dairy fund that would operate using the same basic approach as the federal Milk Income Loss Contract (MILC) program. That program, which began operation in December 2001, makes payments to farmers when milk prices fall below a trigger price.

The 2008 Farm Bill modifies the MILC program so that the trigger price for MILC payments is no longer a flat \$16.94, but is a trigger price that can be higher than \$16.94 when feed prices are high.

Specifically, the trigger is now based on the milk ration value cost (MRC), which is calculated as:

$$\text{MRC} = 51/56 * P_{\text{corn}} + 8/60 * P_{\text{soybeans}} + 41/2000 * P_{\text{alfalfahay}}$$

(This is based on the assumption that 100 pounds of dairy feed is composed of 51 pounds of corn, 8 pounds of soybeans, and 41 pounds of alfalfa. The fractions adjust for the fact that corn and soybean prices are reported on a per bushel basis -- 56 pounds of corn per bushel and 60 pounds of soybeans per bushel -- and alfalfa prices are reported on a per ton basis.)

The MRC is computed every month using national feed prices reported in the NASS publication Agricultural Prices. (available on line at <http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1002>)

In the 2008 legislation, whenever the MRC exceeds \$7.35, the national MILC trigger is adjusted upward. (The federal MILC trigger can never fall below \$16.94, regardless of the level of feed prices.) The \$7.35 MRC is established using feed prices in a base period in 2007.

For May 2008, the national feed prices are $P_{\text{corn}} = \$5.28$, $P_{\text{soybeans}} = \$12.10$, $P_{\text{alfalfahay}} = \177 , so $\text{MRC} = \$10.05$. This exceeds \$7.35 by 36.73%.

To calculate the new MILC trigger, take this 36.73%, and multiply by 0.45 to get 16.53%. Then raise the old MILC trigger of \$16.94 by 16.53%, so the new federal MILC trigger becomes \$19.74.

Since the Boston class I price for May 2008 is \$19.87, it is above the MILC trigger, and there will be no federal MILC payments for May 2008.

The general formula for calculating the national MILC payment trigger price (TP) is:

$$TP = 16.94 \times [1 + .45 \times (\text{currentMRC} - \text{baseMRC})/\text{baseMRC}]$$

The 2008 farm bill specified that baseMRC = \$7.35.

A quick look at historical (annual) price data shows that feed prices and milk prices are higher for Maryland than for the nation as a whole. For example, using five year average annual prices for feed, the milk ration cost for Maryland was \$6.87, and the milk ration cost for the US was \$5.64.

A state program could be designed to use exactly the same approach as the national approach to adjusting the MILC trigger, but to base the adjustment on Maryland feed prices rather than US prices. Below I present three options for calculating the base feed price, using average prices for November and December of 2007.

Option	Base location	Current month location	Corn P	Soy P	Hay P	Base MRC
0	US	US	3.595	9.705	135.5	7.35
1	MD	MD	4.257	10.561	211.667	9.62
2	US	MD	3.595	9.705	135.5	7.35

Option 0 would simply set up a state program which matched the Federal MILC payment. In months when the Federal MILC payment was 0, the state payment would be 0 under this option.

Option 1 replicates the new Federal MILC rules, but uses Maryland prices to establish a base MRC and uses current Maryland prices to measure feed price changes.

Option 2 uses national prices to measure the base feed costs, but use Maryland prices to measure current costs.

The impact of the three options for two recent months is shown in the tables below.

May 2008.

Option	Base MRC	Current MRC	MILC trigger	Boston CI I	MILC payment
0	7.35	10.05	19.74	19.87	0
1	9.62	12.37	19.12	19.87	0
2	7.35	12.37	22.14	19.87	1.02

June 2008.

Option	Base MRC	Current MRC	MILC trigger	Boston CI I	MILC payment
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0	7.35	10.90	20.62	21.42	0
1	9.62	12.41	19.15	21.42	0
2	7.35	12.41	22.18	21.42	0.35

The federal MILC program provides a payment to dairy farmers during months of economic emergency. Option 0 uses exactly the same definition of economic emergency, but makes additional (for the purposes of this discussion, I assume they would be matching) payments to Maryland farmers. Since this is a definition of economic emergency that has been accepted for the federal program, this option would require no further explanation of how the term economic emergency is defined under the state program.

The other options (1 and 2) contain the possibility that the state program would identify “economic emergencies” in a different way so that potentially Maryland farmers would receive state payments when there was no federal MILC payment.

Option 1 defines economic emergency in such a way that Maryland farmers could receive state payments when farmers nationally are not receiving federal MILC payments if feed prices in Maryland go up faster than feed prices nationally. On the other hand, Maryland farmers could receive zero state payments even when there is a positive federal MILC payments if Maryland feed prices go up more slowly than feed prices nationally. (To be clear: it is also possible that both state and federal payments would be zero, or would be positive.)

For May and June 2008, option 1 gives a lower state trigger than the federal MILC trigger because Maryland hay prices have declined while national hay prices have increased over the last six months. Corn prices increased 70% nationally, but 68% in Maryland. Soybean prices increased 39% in both Maryland and the nation. Hay prices dropped by 9% in Maryland but increased by 27% nationwide.

Higher Maryland feed prices would have generated positive payments. If, for example, May feed prices had been \$7 for corn, \$14 for soybeans and \$250 for hay, option 1 would have triggered a state payment.

The definition of economic emergency in option 1 would be relatively easy to defend and explain, since it uses the exact same methodology as the federal program, but bases the trigger on changes in Maryland feed prices rather than national feed prices.

Option 2 defines economic emergency in a way that takes into account not only differences in price changes between Maryland and the US, but also differences in price levels between Maryland and the US. Maryland feed prices run 10-30% higher than national prices (comparing MRCs) and average about 20% higher. In the federal feed cost base period (November and December of 2007), Maryland feed prices were 31% higher than national prices. Therefore, option 2 would have set a Maryland state trigger price that is $(.45 \times 31\% =)$ 14% higher in the base period months and would set a state trigger that is less than 14% higher in months when Maryland feed prices grow more

slowly than national prices and is more than 14% higher in months when Maryland feed prices grow more rapidly than national prices.

Option 2 is likely to trigger a state payment almost every month. If Maryland feed prices steadily maintained their average 20% premium, the state trigger price would be about 10% above the federal trigger. A trigger price 10% higher than the national trigger price would have triggered MILC payments in 63 of the 78 months that the MILC program has been in effect (since December 2001). In effect, adopting option 2 would require the state of Maryland to find that the dairy farmers in the state face emergency conditions 80% of the time..

When a federal MILC payment is triggered, the size of that payment is calculated as 45% of the difference between the trigger price and the Boston Federal Order Class I price. For example, if the trigger price is \$16.94 and the Boston Federal Order Class I price is \$15.94, the federal MILC payment is 45 cents per hundredweight. Assuming that state payments were calculated the same way, we can estimate what would have happened if a state program had been in effect for the years 2002-2007. An emergency fund program using option 2 would have generated state payments that average \$1.11 per cwt per month, costing the state an average of \$8.5 million per year, and varying between \$1.5 million (in 2007) and \$15 million (in 2002). (These are estimates that have taken payment limitations into account only in a very rough way. A more careful consideration of payment limitations is likely to increase the cost estimate by a relatively small amount.) State payments to the largest farms (those whose payments are capped by the 2.98 million pound federal cap) would have averaged \$33,200 per year over the six year period and would have ranged as high as \$58,700.

Total state costs could be reduced within the context of option 2 by specifying a payment that is some percentage (less than 45%) of the difference between the trigger and the Boston class I price. For example, a state program that paid farmers 22.5% (chosen because it is half of 45%) of the difference between the option 2 trigger and the Boston class I price would have cost an average of \$4.25 million per year, varying between \$0.75 million and \$7.5 million. Statement payments to the largest farms would have averaged \$16,600 per year and would have ranged as high as \$29,350.

Total state costs could also be reduced by putting a dollar limit on per farm payments. (I have not worked out any details on this, pending advice on what level of per farm payment limitations I should consider.)

While option 2 takes into account the fact that Maryland feed prices run above national feed prices, it ignores the fact the Maryland milk prices also run above national milk prices. In the past few years, Maryland milk prices have run 4-7% above the national price, averaging about 6%. Adjusting the state payment trigger for Maryland milk prices would require a measure of those prices. Maryland milk prices are not available on a month by month basis. Mailbox price for the Northeast order is available with a two month lag.

The Federal MILC program was designed more by political tradeoffs than economic logic. The program took the place of the New England Dairy Compact, under which consumers were required to pay higher prices to finance higher prices to farmers. Under the MILC program, the cost of the program shifted from milk consumers to taxpayers, but the price structure facing New England dairy farmers was essentially the same as under the compact. The government payments needed to make New England farmers “whole” in the face of the loss of their Compact were also paid to all dairy farmers nationwide. Although there are substantial differences in regional costs of milk production, those differences are mirrored by differences in regional milk prices. The national MILC program set a single subsidy rate to paid across all regions during periods of low milk prices. The 2008 farm bill changes the definition of “periods of low milk prices” but does not attempt to make any further adjustments for regional differences in cost of production.

[Addendum about measuring feed prices in Maryland. In this analysis, I used prices as reported in the weekly Maryland Grain and Livestock Report.

http://www.nass.usda.gov/Statistics_by_State/Maryland/Publications/MD_Grain_&_Livestock_Report/2008/index.asp

To calculate monthly corn and soybean prices:

1. Calculate the simple average of prices reported for a day in the five regions (excluding regions for which no price is reported for that day). This is the “daily price”. Typically prices are reported for one day each week.
2. Calculate the simple average of all daily prices for the month. This is the monthly price.

To calculate the monthly alfalfa hay price:

1. Calculate the midpoint of the high and low price reported for alfalfa in New Holland, PA for each day a price is reported. This is the “daily price”. Typically prices are reported for one day each week.
2. Calculate the simple average of all daily prices for the month. This is the monthly price.

Before setting up a program based on these prices, some consideration should be given to the question of whether this price reporting system will continue to be operational for the foreseeable future, and whether the markets are so thin that the prices could be subject to manipulation.]

Attachment 2

An Analysis of the Impact of a “Sales Below Cost” Law on Retail Milk Prices in Maryland

**Howard Leathers, University of Maryland, College Park
September 2008**

Our ability to estimate the impact of a sales below cost law on retail milk prices in Maryland is limited by the lack of data about prices and quantities, and by uncertainty about how such a law would actually be administered. The analysis herein therefore requires a number of estimates and educated guesses. We proceed by asking two questions: (1) What is the likely impact of a sales below cost law on wholesale milk prices in Maryland? and (2) How do changes in wholesale milk prices get translated into price changes at the retail level?

The existence of minimum administered prices in Pennsylvania creates a situation in which Pennsylvania processors might have an incentive to sell below cost in Maryland. The reasons to think that this could happen are:

- The administered prices might encourage processors to stay in business when they would have exited without the protection of administered prices. The “excess production” caused by the continued operation of these processors may be sold in Maryland, where price competition is legal.
- The minimum wholesale prices in Pennsylvania cause a restriction in quantity of milk demanded (below what would occur without the minimum prices). This restriction in quantity may cause some Pennsylvania processors to operate a below full capacity (full capacity being the quantity of throughput that would minimize average costs of production). Aggressive price cutting to increase sales in Maryland would allow Pennsylvania processors to increase total quantities and thereby reduce average production costs.
- Administered pricing may guarantee profits for sales in Pennsylvania, and those profits could be used to subsidize losses incurred in sales in Maryland.

The limited information on prices available provides some evidence that this is, in fact, occurring. Retail price information is collected by industry sources from stores in the Frederick area (the area most likely to be affected by sales below cost marketing from Pennsylvania processors). One of those retailers (according to industry sources) uses a fixed percentage markup to determine retail prices each month. This gives us a source of information about wholesale price in Maryland for 17 of the 20 months January 2007 to August 2008. (For 3 months, no information was collected). The prevailing wholesale price in Maryland can be compared to the minimum wholesale price for the same product in a region 4 of Pennsylvania (a region bordering Maryland extending from Lancaster County, PA in the east to Fulton County, PA, in the west).

For the 17 month period, estimated average wholesale price (for gallons of wholemilk) in Maryland was \$2.91 and the average minimum Pennsylvania wholesale price was \$3.44, a price difference of about 50 cents. The Pennsylvania wholesale price of \$3.44 does not reflect quantity discounts which range from 8.92 cents per gallon to 40.4 cents per gallon, depending on the shipment size. I have no information on shipment sizes, but the average difference is almost certainly less than 50 cents, perhaps in the 20-30 cent range.

Additional evidence can be found in the fact that the minimum bids for milk sold to a Maryland School System and a local prison were submitted by Potomac Farms, a company with a processing plant in Pennsylvania, and a second processing plant in Cumberland, MD. In this case, the company could potentially use profits generated in their Pennsylvania plant (profits generated by the administered pricing system in Pennsylvania) to subsidize losses in their Maryland plant. (Of course, nothing prohibits Maryland processors from opening plants in Pennsylvania, or from marketing their milk to retailers in Pennsylvania, at the administered price. However, the Pennsylvania regulations effectively prohibit competition on the basis of price; and Maryland processors are at a geographical disadvantage when it comes to competition on the basis of service and convenience. During 2007, Maryland processors sold less than 50,000 pounds of milk in Pennsylvania. Pennsylvania processors sold 264,000,000 pounds of milk in Maryland.)

For a variety of reasons, it is unlikely that passage of a sales below cost law would result in a 50 cent per gallon increase in wholesale prices in parts of Maryland close to Pennsylvania. First, it is not clear that the sales below cost law would require Pennsylvania processors to sell at the Pennsylvania administered wholesale price. Second, as noted above, the 50 difference does not reflect quantity discounts in the Pennsylvania regulations, so that the effective Pennsylvania administered wholesale price is less than \$3.44 average of base prices. Third, it is unlikely that wholesale prices from Pennsylvania processors are the sole factor determining wholesale prices in Maryland. Competition among Maryland processors (and processors in other states) is likely to keep the wholesale price increase to an amount lower than the difference between the Maryland average wholesale price and the Pennsylvania administered wholesale price adjusted for quantity discounts. The likely impact of a sales below cost law would therefore be to raise the wholesale price in Maryland by 5-20 cents per gallon. The impact will be greatest in areas bordering Pennsylvania; wholesale prices in the Eastern Shore are unlikely to be affected.

Data provided by the Pennsylvania Milk Marketing Board shows that fluid milk sold by Pennsylvania processors to retailers in Maryland amounts to about 264 million pounds. This is 15% of total fluid milk sold by these Pennsylvania processors. It is about 25% of total fluid milk consumed by Maryland consumers, and about 28% of total fluid milk consumed in Maryland outside lower shore counties.

The second part of the analysis looks at how price changes at the wholesale level are translated into price changes at the retail level. In any short period of time, the

relationship between wholesale and retail prices can be quite variable and unpredictable. Some retailers may choose not to pass along small month to month changes in wholesale costs, preferring to maintain a stable price for their customers. For example, retail price at Giant Foods remained unchanged from February to June 2008 even as class I cooperative prices fluctuated by 16 cents per gallon. However, the kind of wholesale price change that would result from a sales below cost law would be seen as a permanent one-time-only change, and is more likely to be reflected at the retail level. An econometric analysis of wholesale and retail prices reported by the Government Accounting Office for 15 cities over 25 month period in 1998-2000 shows that for each 10 cent increase (or decrease) in the wholesale price, retail milk price increased (or decreased) by about 3 cents.

Putting these two results together: the sales below cost law is likely to cause an increase in Maryland wholesale prices of less than 50 cents per gallon, and probably in the range of 5-20 cents per gallon; this would translate into retail price increases of 1-6 cents per gallon. The impact would be limited geographically to counties close to the Pennsylvania border.

One final uncertainty should be noted. It is conceivable (though by no means certain) that the sales below cost law could result in lawsuits, or legal and accounting costs associated with meeting regulatory requirements. If these costs are significant, that could have a more substantial impact on Maryland retail milk prices, as processors raise prices to recoup the additional costs, and as processors are dissuaded from competing in Maryland because of the regulatory burden. If this were to occur, the impact at the retail level could be higher than the 1-6 cents per gallon estimated here. At the other extreme, it is conceivable that processors will be able to meet the requirements of the sales below cost law without having to make any substantial changes in pricing. In this case, the law would not have any impact on wholesale and retail prices.

Attachment 3

**Education and Research Proposal to Support
the Maryland Dairy Industry**

Dairy support, University of Maryland Cooperative Extension

Robert R. Peters
Professor and Extension Dairy Specialist
Department of Animal and Avian Sciences
University of Maryland, College Park

Summary: This proposal will support the goal of improving the stewardship of the Chesapeake Bay watershed, support environmental sustainability and enable farmers to remain on their farms with profitable dairying. Loss of farmland across the Chesapeake watershed was highlighted in a 2006 report by the Chesapeake Bay Foundation titled, *A Guide to Preserving Agricultural Lands in the Chesapeake Bay Region: Keeping Stewards on the Land* (2). A key statement in the report was: “An acre of well-managed agricultural land is better for the Bay than an acre of new development”. Cropland associated with dairy farms totals approximately 250,000 acres of open space. The education and research projects in this proposal have the potential to slow the loss of farmland to development for housing and industrial uses. The projects in this proposal have a proven tract record of improving the efficiency and profitability of producing milk in an environmentally responsible way. Achieving these goals will enable dairy producers to continue the legacy of producing a local supply of fresh milk, slowing the loss of farmland, and sustaining an important economic engine in Maryland’s local communities.

Three recommendations of this proposal are:

1. Develop a Memorandum of Understanding with Pennsylvania State University, Department of Dairy and Animal Science, University Park, to formalize a process to expand dairy educational opportunities of the Maryland dairy industry in their local communities. This agreement would also increase the opportunities of faculty at the University of Maryland and Pennsylvania State University to collaborate on new initiatives that capitalize on complementary areas of expertise.
2. To create a Center of Dairy Excellence at the University of Maryland, Department of Animal and Avian Sciences, College Park. The Center would hire a Dairy Coordinator and this center would be responsible for administering and coordinating two new dairy initiatives: The Dairy Profit and Target Team Program, and the Dairy Food Safety and On-farm Processing Program. The Center would also serve to administer and coordinate other dairy educational initiatives that are needed to expand the economic opportunities of the Maryland Dairy Industry. Budgetary needs for this recommendation are \$145,000 per year.

3. Enhance dairy research and undergraduate education at the University of Maryland with \$250,000 of new funds. The purpose of these funds would be to support applied dairy research, demonstration projects, and internships for undergraduate students seeking large food animal experience.

Introduction: Similar to national as well as regional trends in the Mid-Atlantic and Northeast areas, the Maryland dairy farm sector has been steadily declining for the past several decades. As reported in the 2007 Dairy Industry Oversight and Advisory Council Report to Governor O'Malley (1), the number of farms licensed to produce milk declined by 35 percent from 1,009 in 1995 to 655 in 2005. Furthermore, the 2007 Governor's Report stated that the decline of dairy farms is projected to continue based on current trends, with Maryland losing from 100 to 220 dairy farms in the coming decade.

Although the number of licensed dairy farms decreased by 35% from 1995 to 2005, the decrease in the number of cows in the state's dairy herd and the total milk production was not as great. For example in the decade from 1995 to 2005, dairy cow numbers decreased from 91,000 to 71,000, or 22%, and the total production decreased from 1.340 to 1.135 million pounds, or 15%. Thus, dairy farm numbers are decreasing faster than the cow numbers and total production. This is an important point because it relates to the amount of land lost to dairy farming. Dairy producers in Maryland historically have raised the most of the forage for their dairy herds and purchased the grain needed for the cow's diet. Because milk output per cow increases annually in Maryland dairy herds, more feed is required to support the additional production. Thus, when a dairy farm goes out of business, neighboring dairy producers or grain farmers may rent that farmland.

Yet it is unavoidable that some dairy farmland continues to be lost to development. The Chesapeake Bay Foundation report (2) stated "The rate of loss of prime farmland across the watershed has slowed a bit from the astonishing pace of previous decades, but agricultural land is still being converted to suburban development by **tens of thousands of acres per year**, a rate that the Chesapeake Bay Foundation considers unhealthy for the continuation of agriculture and unhealthy for the Bay."

Losing dairy farms is not only detrimental to the environment; it is also a significant economic loss. Recent economic studies (3) from Pennsylvania indicate that a dairy cow contributes \$13,737 annually to the local community. In 2007, dairy herds in Maryland averaged 99 cows per farm. Thus, losing 100 to 220 farms has an estimated economic loss to the state's economy of \$136 million to \$299 million.

In recognition of the potential dairy farm loss and associated economic loss to the state's economy, a Maryland Dairy Farmer Emergency Trust Fund was passed by the legislature and signed into law by Governor O'Malley in 2008 to assist dairy farmers. This legislation is designed to thwart the loss of dairy farms when milk prices drop below the cost of production. To further ensure dairy farm profitability and sustainability, an effective education and research program has also long been recognized as a necessary ingredient for the long-term success of an industry.

Strategic Approach, Leveraging Existing Resources: The competition for state funding is very competitive and legislative support to fund dairy education and research solely to save dairy farming are not likely to be a high priority. The State may, however, consider proposals that are modest in cost and contribute to strengthening the economy, contribute to environmental goals, and retain Maryland's open space in the rural areas. Most importantly, retaining dairy farms and the land used for pasturing cattle and growing crops benefits the citizens of Maryland with a natural means to maintain water quality. Thus, a request for modest funding to expand capabilities of existing infrastructure is the best means to gain access to other resources that are not currently available to Maryland's dairy producers. These additional resources are key to assisting Maryland's dairy producers in remaining profitable and viable businesses.

Enhancement of Dairy Education and Research through Collaboration. Maryland dairy producers have historically relied on Maryland Cooperative Extension and other industry sources of support for education programs. Yet, as reported in the 2006 the Statewide Plan for Agricultural Policy and Resource Management to Secretary of Agriculture Lewis Riley (4), "Across-the-board funding cuts for agricultural support systems and services have significantly reduced the availability of education and technical assistance provided to Maryland farmers". Furthermore, consolidation of the dairy industry regionally and nationally has changed the way education and services are provided to dairy farmers. For example, USDA and Cooperative Extension have recently implemented DAIREXNET, a national system being developed with a single website devoted to the most credible and science-based information available from the best U.S. land-grant universities. And University of Maryland faculty with expertise in dairy science has provided leadership for development of DAIREXNET. Through a cooperative effort nationwide, university Extension specialists provide cutting edge fact sheets and frequently asked questions to producers, allied industry, extension educators and consumers. Another example of leveraging resources is The University of Maryland dairy Extension educators participating in an annual 3-day regional dairy inservice training program with 8 other Mid-Atlantic and Northeast region states since 1999. This approach significantly improves the quality of instruction that Extension agents receive, reduces duplication, and the cost of training is done at a reasonable fee. With respect to research, University of Maryland faculty in animal science often collaborates with other land-grant universities on national projects that integrate extension and research. Thus, educational institutions have encouraged collaboration with sister institutions on regional and national projects to accomplish education and research goals.

Enhanced Dairy Industry Education Program

Proposed Memorandum of Understanding with Pennsylvania State University (PSU), Department of Dairy and Animal Sciences, University Park. Due to the size and importance of the Pennsylvania dairy industry, many specialized dairy educational programs have been developed for Pennsylvania producers and allied industry. Also, several faculty members at Pennsylvania State University have specialized expertise that

is not available through the University of Maryland. Examples of such areas are herd health, agricultural engineering, and in-depth analysis of financial and management records. Furthermore, in the last several years Pennsylvania has invested in positions through the development of the Pennsylvania Dairy Alliance (<http://www.das.psu.edu/user/da/pdf/DAProgramGuide>). These are state-funded non-tenure positions and are dedicated to the economic development of the dairy industry and thus these faculty members are not burdened by the usual encumbrances of university responsibilities such as achieving national and international recognition for promotion and tenure. These faculty members have also been able to leverage expertise from the regularly tenured faculty members in various academic departments at Pennsylvania State University. In total there are 19 faculty members that participate and develop Extension education programs. The 24-page 2008-2009 Dairy Alliance Program Guide lists 10 dairy programs that are currently available to dairy producers and allied industry.

The access to the dairy programs from PSU greatly expands the educational menu of topics that could be delivered directly to Maryland dairy producers. The 2008-2009 Program Guide offers programs in traditional dairy subjects like udder health, reproductive management, nutrition, business management, and computer assisted tools to probe limitations to profitability. In addition, the PSU program offers customized training programs producers and managers in team building, profitability assessment, Spanish language training, and farm accounting systems.

Currently, the Pennsylvania dairy programs are advertised throughout the Mid-Atlantic region and Maryland farmers are invited to participate in them. Nevertheless, few dairy farmers from Maryland take advantage of these programs. Based on a University of Maryland survey taken in 2006 (5), dairy farmers prefer to travel less 50 miles to a meeting and less than 50% are willing to pay a registration fee. The ability to interact with advisors also ranked as a high priority. For example, the four characteristics that had the highest importance to dairy producers in the survey was: 1. has general knowledge about many dairy topics 2. has quick access to specialists when needed 3. provides a quick response and 4. will visit your farm. From these responses it is apparent that dairy producers in Maryland prefer to have programs that are held in their own local communities and the opportunity for follow-up with the specialists. The MOU (Recommendation 1) and new dairy coordinator position (Recommendation 2) would bring a new and greatly expanded opportunity for education in their local communities for dairy and business management training.

While PSU has a tremendous wealth of dairy specialists and dairy educational programs, the University of Maryland is well known for building virtual dairy communities through the Internet. Examples of these communities are Dairy-L for producers and allied industry professionals, AABP-L for bovine practitioners, and a virtual library for all parties interested in dairy production. This is an area that is ripe for collaboration and complementing expertise at PSU for mutual benefit for both universities. For example, a Dairy Profit or Target Team virtual community may be advantageous to generating interest in participating in advisory teams, and in making them more effective as educational forums.

Recommendation 1: Dr. Terry Etherton, Chair of the Department of Dairy and Animal Science, at Pennsylvania State University is the contact person. The proposed Memorandum of Understanding would allow for cooperative and contract opportunities between the faculty in the Maryland Cooperative Extension and the Department of Animal and Avian Sciences at the University of Maryland and Pennsylvania State University faculty. The following points are guidelines for the faculty in the MOU.

- It is understood that PSU Dairy Alliance is a rich source of dairy educational programs for dairy producers, allied industry, and government officials and that Maryland dairy producers, allied industry, and government officials may benefit from these programs. The mechanism for an orderly process for requesting these programs and making them available is one objective of this agreement.
- The communication and request for an educational program at PSU may be transmitted from a county agent, Extension educator, regional Extension specialist, or campus-based Extension specialist at the University of Maryland. This request should be made to the Director of Dairy Alliance at PSU.
- The agreement for arranging to have PSU deliver educational programs to Maryland would usually be a contractual agreement with fees for travel, materials, training, and consulting prearranged with the Director of Dairy Alliance.
- Occasionally, specific requests from PSU faculty may be made for Maryland speaking engagements or farm visits on a case-by-case basis. Fees for travel and/or consulting are to be pre-arranged directly with the PSU faculty member.
- A mutual benefit of the MOU is regular communication between faculty members with dairy expertise at PSU and the Department of Animal and Avian Sciences and Maryland Cooperative Extension. This communication may be through program planning activities, advertisements of programs, or marketing materials. A list of the mailing and e-mail addresses will be provided to the Director of Dairy Alliance with appropriate contact information.
- Collaboration between faculty at PSU and the University of Maryland is encouraged for mutual benefit of improving educational programs. It is recognized that both PSU and the University of Maryland have unique and complementary areas of expertise that may be mutually beneficial.

This MOU needs to be negotiated between the appropriate administrative officers at the respective institutions. In addition, the MOU may need to be revised to meet University guidelines or other administrative requirements.

New Dairy Industry Education Initiatives

1. Dairy Profit and Target Team Program. Peter C. Witmer, Executive Assistant to Pennsylvania Secretary of Agriculture noted in his visit to the Maryland Dairy Industry Oversight and Advisory Council on March 26, 2007, that the Dairy Profit and Target Team Program was the “Flagship” program to help grow the dairy industry in Pennsylvania. Specifically their goal was to grow and expand the dairy industry at the

farm level. The Impact Report (3) of this Pennsylvania program stated that \$1 in state funds = \$435 in economic impact and farm level improvements generated \$149 in net income per cow. Currently, 125 Pennsylvania dairy farms have a Dairy or Target Profit Team, and it is estimated another 125 farms have implemented a profit or target team without any formal support. Key points of the program:

- Program is coordinated through the Center for Dairy Excellence by Heather Hostetter. Her responsibilities are: 1. receiving applications for the program 2. Coordinating training for team facilitators and team members, and 3. Monitoring farm performance and publishing results
- Once on the program each producer picks the team members; producer works with the Center of Dairy Excellence to pick facilitator. 50% of teams use county Extension agent for facilitator.
- The team meets a minimum of 4 times per year and goes as long as desired by the producer.
- Producer decides whether to develop a target team or profit team. Profit teams are comprehensive in scope whereas target teams focus on a specific bottleneck or new initiative.
- New Profit or Target Teams are eligible to for up to \$3,500 in the first 18 months. Maximum per-meeting expenses for paid team members are \$450 and maximum for single item expense is \$1,000.
- Specific education and training for facilitators and professionals serving on teams are delivered through Dairy Alliance at PSU.

Pennsylvania currently has 125 teams operating in the state with a goal of increasing that number to 175 in the next year. Thus, while the program has a large impact on improved profitability, only a small percentage of the Pennsylvania farms participate (125 teams/8,500 farms = 1.5%) or expect to participate (175 teams/8,500 farms = 2%). Based on this experience, Maryland could expect from 9 to 12 farms to participate initially and estimated 2-3 new farms joining the program per year.

2. Dairy Food Safety and On-farm Processing. With a robust urban and suburban population near Maryland's dairy farms, an opportunity for growing the dairy industry is in the area of non-traditional farms. Such ideas as on-farm processing and selling local farm products are on increasing along with increasing food safety concerns.

Recently, increased food safety incidences associated with on-farm processing have led to raised concerns by the Maryland Department of Health and Mental Hygiene on the lack of proper training and resources to assist small farmers in ensuring the safety of their products. Led by Martin Lo and Mark Kantor, professors in the Department of Nutrition and Food Science, a Food Safety eXtension Community of Practice geared specifically for small and on-farm processors are being developed. More than 40 experts from more than 20 states have joined the efforts. Various training modules and online resources will be made available to farmers and extension educators.

Recommendation 2. Budget for Enhanced Dairy Industry Education

It is recommended that the University of Maryland open a Center of Dairy Excellence to foster and expand the economic opportunities of the dairy industry. As part of this Center it is recommended that a Dairy Profit and Target Team Program be developed and information and technical assistance for stabilizing and encouraging the growth of the dairy industry. The administration and coordination of the program would be through a new dairy position located at the University of Maryland in the Department of Animal and Avian Sciences. It is also recommended that an operating budget for education, training and technical assistance be made available to this Center.

- A position is needed with an operating budget to coordinate the dairy activities associated with the Dairy Profit and Target Team Program. Specific duties would include: 1. marketing and recruiting dairy producers to participate in Dairy Profit and Target Team Program and administering all details and follow-up activities to document progress in the program 2. planning and delivery of dairy Extension educational programs with the faculty in Dairy Alliance at Pennsylvania State University and University of Maryland, and 3. assisting producers with information and educational program that are interested in on-farm processing and associated food safety concerns. The person filling this position should have a minimum of a M.S. degree in dairy or animal science or related degree and 5 years of industry or equivalent experience working with dairy farms.

- **Extension Coordinator**

▪ Annual Salary and benefits	\$90,000
▪ Program support (travel, training fees, supplies, etc.)	\$30,000
▪ First year start-up (profit and target team support)	<u>\$25,000</u>
Total	\$145,000

Enhanced Dairy Research and Undergraduate Education at the University of Maryland

New Dairy Research and Undergraduate Initiatives

1. Increase the capacity for applied dairy research. The University of Maryland has faculty specifically interested in dairy cattle and a dairy production facility designed to conduct applied dairy research near Clarksville, Maryland. This modern facility was built in the mid-1990's and consists of 200 head of Holstein cattle including 110 milking cows and 90 head of young stock. The faculty members that devote at least part of their professional expertise to dairy cattle research are Dr. Richard Erdman, Dr. Richard Kohn, Dr. Brian Bequette, Dr. Mark Varner, Dr. Carol Keefer, and Dr. Robert Peters. Examples of excellent research projects on dairy cattle have been carried out at the University of Maryland include: 1. Feeding programs and additives to prevent milk fat depression (Erdman), 2. Multiple milkings in early lactation to increase milk yield (Erdman and Varner) 3. Long-day lighting to increase daily milk yield (Dahl, Erdman and Peters) 4. Novel lameness detection device (Stepmetrix) sold commercially by Boumatic Company

(Varner), 5. Nutrient management research to reduce phosphorous excretion (Kohn), and 6. New teat dip (Masticide) tested and marketed by Sporicidin International (Peters). These are examples of applied research projects that have immediate application to improve water quality of the Chesapeake Water Shed, profitability, cow comfort, and reduce costs of production. Nevertheless, the amount of funding now available for doing applied dairy research that producers typically need and appreciate is scarce. Research agencies like USDA, NIH, and NSF have shifted more research funding towards fundamental research that is done with lab animals and in research laboratories. Moreover, research that has potential for practical application from national funding agencies often requires preliminary data. Thus, due to the types of funding that are available to conduct applied research, projects that are funded and conducted at the University of Maryland dairy facility happen sporadically. The need is to have a base of funding to do applied dairy research for issues specific to Maryland producers and to provide seed money for faculty to generate preliminary data that is required to successfully compete in national grant competitions. This would greatly improve the capacity of scientists at the University of Maryland to conduct a regular program of dairy research specific to the needs of the Maryland Dairy Industry.

2. Increase support of undergraduate internships. It is well known that the supply of large animal food veterinarians are in short supply nationwide, and the shortage is expected to increase in the future. This shortage has implications for students applying to veterinary colleges. Thus, students applying to veterinary colleges are encouraged to have large animal handling experience in the hope that they will chose a career in food animal medicine. In addition, students with experience with large domestic farm animals have a competitive edge in the application process. At the University of Maryland in the Department of Animal and Avian Science, the most popular option for undergraduates is pre-veterinary medicine. Because of the excellent program that the University of Maryland offers in pre-veterinary medicine, greater than 80% of the undergraduates, or 15-20 students per year, applying for veterinary school are accepted at a U.S. School or College of Veterinary Medicine.

Currently, there are no funds within the Department of Animal and Avian Sciences for paid internships. Funds for internships to support working experience with large food animals would be extremely helpful because the vast majority of students come from urban and suburban backgrounds, and are unfamiliar with production agriculture and practices to manage large food animals. Internships are an excellent way for a student to gain practical experience. As previously mentioned, food animal experience is encouraged for students applying to veterinary colleges but this type of experience is also important for students considering a dairy related career. Dr. Dan Mote, President of the University of Maryland, has included internships as part of his President's Promise Program. He encourages every student to have a "special program experience outside of the classroom". Dr. Mark Varner, Undergraduate Program Coordinator in the Department of Animal and Avian Sciences at the University of Maryland supports Dr. Mote's President's Promise Program, and has approximately 20 students each year that specifically request internships with large food animals. The need, therefore, is have

funds that encourage and support undergraduate students seeking internships for experience with large food farm animals.

3. Budget needed for enhancing dairy research and undergraduate internships

The annual research budget would be \$250,000 per year and the Maryland Agricultural Experiment Station would distribute this money on a competitive basis. The funds would be available to faculty at the University of Maryland to support applied dairy research, demonstration projects, and undergraduate internships. The funds could be used for applied research projects that 1. help new farmers establish dairy farms that are interested in non-traditional enterprises such as on-farm processing, agro tourism, and pasture-based dairying, 2. assist conventional dairy farms and production related issues such as profitability, health, and cow comfort, 3. management practices that enhance environmental stewardship of the Chesapeake Bay watershed, and 4. internships for undergraduate students interested in large animal experience.

References

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