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Expert Report of Dr. Robert A. Cropp

Highly Confidential

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
OAKLAND DIVISION

MATTHEW EDWARDS, et. al., individually and on behalf of all others similarly situated

Plaintiffs,

v.

NATIONAL MILK PRODUCERS FEDERATION, aka COOPERATIVES WORKING TOGETHER; DAIRY FARMERS OF AMERICA, INC.; LAND O'LAKES, INC.; DAIRYLEA COOPERATIVE INC.; AND AGRIMARK, INC.,

Defendants.

Case No. 3:11-CV-04791-JSW

[consolidated with 11-CV-04791-JSW and 11-CV-05253-JSW]

EXPERT REPORT OF DR. ROBERT A. CROPP

Contains Highly Confidential Information Subject to Protective Order

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I. QUALIFICATIONS

1. My experience in the dairy industry is both academic and first hand. I was born into a family of dairy farmers in Wisconsin and worked on the farm until leaving for college, and even then I continued to milk cows during the summer. As a graduate student I studied agricultural economics and I focused my thesis on issues in the dairy industry. I went on to earn a doctorate in agricultural economics and have dedicated my career to dairy market issues.

2. I have been a professor in the University of Wisconsin system since 1966. My current position is Emeritus Professor in the Department of Agricultural and Applied Economics for the College of Agricultural and Life Sciences at the University of Wisconsin-Madison. I have taught college courses in many subjects in agricultural economics, conducted research on a variety of milk marketing issues, and have numerous academic publications concerning the dairy industry. My industry and academic experiences are more fully detailed in my curriculum vitae, which accompanies this Report in Appendix 2.[1]

3. Through the University of Wisconsin Cooperative Extension Program I continued to work directly with dairy farmers and others to help them understand the dairy industry and better manage their farms relative to the economics of the industry. I was instrumental in developing the first dairy price risk management system (forward milk price contract) for a cooperative and I have educated countless farmers on the intricacies of dairy pricing. I have a deep understanding of the thought process and decision making of dairy farmers from discussions with farmers over the last 48 years, particularly when it comes to the impact of prices on farm management and production decisions.

4. I am recognized as an expert source of information for many dairy industry participants throughout the country. Since 1974, I have written a monthly industry outlook column that is distributed nationwide and published in major trade publications, such as the Cheese Reporter and Cheese Market News, and is quoted extensively in others. The recipients

[1] I am being compensated at a rate of $300 per hour for my work on this matter, and my compensation is not dependent on the outcome of this matter.

of my column include members of Congress and Senators, as well as notable academics and dairy industry leaders. I also write a separate annual column for Hoard's Dairyman regarding market conditions. I have also testified at federal and state milk marketing order hearings and before the U.S. Congress on dairy policy.

5. I hold the opinions set forth in this report to a reasonable degree of certainty as an agricultural economics expert, and they are based on information and data typically relied upon by individuals with my training and background in forming such opinions. In the event additional information or data is made available, I reserve the right to amend the opinions I have expressed.

II. SUMMARY OF OPINIONS

6. I was retained by Defendants National Milk Producers Federation, Dairy Farmers of America, Inc., Land O'Lakes, Inc., Dairylea Cooperative Inc. and Agri-Mark, Inc., to consider how the structure of the dairy industry, the management of milking cows, heifers, and dairy bull calves within the dairy herd for milk and beef production, the regulatory structure of the dairy industry, and the history of government involvement in the dairy industry, affected the likely impact of the Herd Retirement Program of the Cooperatives Working Together program of NMPF on certain aspects of the dairy industry.

7. Cooperatives Working Together (CWT) is a committee of the National Milk Producers Federation that was formed by dairy cooperatives, which joined together to collectively implement programs to help dairy farmers strengthen and stabilize the price of milk that they receive.[2] One the ways CWT undertook to accomplish this goal was by subsidizing the marketing of dairy cows for beef through a program known as the Herd Retirement Program.[3] This program accepted bids from farmers to sell their entire milking herd into the beef market. The bids that were accepted were then used to calculate a beef marketing subsidy

[2] NMPF0000004

[3] *Id.*

that would account for or at least reduce the difference in value between the beef value of the cows in the herd and their continued milking value.[4]

8. Dairy farmers have two primary sources of income: milk from their cows and sales of cows and calves for beef. An average milking cow will produce milk for only three years before being sold for beef. In an average year, a typical farmer will cull nearly 30 percent of his milking herd for beef. Additionally, a typical milking cow will birth three calves during its productive years, but on average only one of these will be kept as a replacement in the milking herd while the others will be sold to a farmer to be raised for meat. This results in approximately 20% of the U.S. beef production coming from dairy cows.[5] In my opinion, beef marketing is an integral part of dairy farming and the CWT Herd Retirement Program facilitated dairy farmers' reallocation of productive assets from milk production to beef production.

9. In my opinion, the CWT Herd Retirement Program would not have affected the supply of Class I fluid beverage milk or Class II soft cream products because governmental regulations ensure that those classes of milk are always given a full supply of milk before any milk is allocated for use in cheese, butter or non-fat dry milk production. At all times during the relevant period from 2003 until the present, there has been an excess of supply of raw milk for Class I and Class II uses and no reduction in supply of milk for those classes occurred.[6] Any reduction in the supply of milk would impact the amount of surplus milk for Class III and Class IV use only. On average, the CWT Herd Retirement Program subsidized the sale of cows for beef that represented less than one percent of the total dairy herd during the period from 2003 to

[4] *Id.*

[5] Cattlemen's Beef Board, "Your Beef Checkoff Investment – Helping You Maximize Dairy Cow Market Value," accessed March 11, 2015 (https://www.beefboard.org/producer/CBBFinalDairyBrochure.pdf).

[6] USDA, "Federal Milk Order Market Statistics," Annual Summaries 2003-2013.

2010 when it was in operation.[7] Overall raw milk production actually increased during the relevant period of 2003 to 2010, both in terms of the number of milking cows overall (completely offsetting any herds culled as a result of CWT) and milk production per cow.

10. The CWT Herd Retirement Program provided benefits to dairy farmers (also known as producers), processors, and consumers. The program allowed inefficient producers who were close to retirement to exit dairy farming, making way for more efficient producers with higher potential cows. The program also reduced the costs associated with excess milk, including balancing and transportation costs. In addition, to the extent the Herd Retirement Program was successful in accomplishing its stated goal of stabilizing milk prices, it benefitted both consumers and dairy farmers by reducing volatility, which has a negative effect on the efficiency of the dairy market.

III. DAIRY FARMING INVOLVES SOPHISTICATED MANAGEMENT OF COWS FOR BOTH MILK AND BEEF

11. Dairy farms are livestock operations and the primary job of a dairy farmer is managing his herd. The modern view of dairy farming looks at cows as the productive asset of the dairy farm. "[The] modern view separates the farm businesses into separate enterprises where the heifer replacement enterprise is in fact a 'meat' enterprise. The 'milk' enterprise made of lactating and dry cows is in essence leasing animals from the 'meat' enterprise. When the lease expires, the animal is returned to the 'meat' enterprise to be slaughtered and its reduced value must be paid as a redemption fee by the 'milk' enterprise."[8] Each year the average dairy farm will sell almost 30% of its milking cows for beef and almost two-thirds of its calves will be sold to be raised for meat, making the "meat enterprise" an integral part of the dairy farm's operations.

[7] NMPF0017724; United States Department of Agriculture (USDA), National Agricultural Statistical Service (NASS), "Milk Production Reports," January 2003-January 2011.

[8] Normand R. St. Pierre, "Culling Rate on Dairy Farms and Its Effect on Income over Feed Costs and Forage Inventory Requirements," Tri State Dairy Nutrition Conference, April 23-24, 2013.

12. The biological cycle of a dairy cow starts with a female calf, called a heifer until it has had a calf of its own. Heifers take around 24 months from birth to entering the milking herd. At about 14 months of age the heifer is impregnated and has a 9 month gestation cycle. After giving birth to a calf the heifer enters the milking herd as a milking cow. The cow is bred again after 60-90 days. The cow will milk for about 10 months, going dry for approximately 2 months before calving again. In total the lactation cycle is around one year but it can be extended up to 18 months.[9]

13. A milk cow will only stay in the milking herd for 3 lactation cycles on average, with some high producing cows being kept for 4-5 cycles while others may be culled after the first lactation. After the third cycle, on average, the cow is typically culled from the herd and sent to slaughter for beef.

14. There is a lot of science and technology that goes into decisions on what to feed cows, how much to feed them, how to manage the biological process involved in milk production, and also when to market the cows for beef. Farmers must constantly evaluate their herd to efficiently manage production. One new form of technology that is being used to increase overall farm revenues from both milk and beef is called gender sexed semen.

15. Sexed semen is increasingly being used to impregnate dairy cows to maximize the potential of their calves. When semen is sexed, sperm more likely to produce male calves is separated from sperm that are more likely to produce female calves. Farmers then select their best milking cows to be impregnated with sperm from a dairy bull that is most likely to result in a female calf. Lower milk producing cows that have greater potential for beef are impregnated with sexed semen from beef bulls that is most likely to result in a male calf that has greater beef value. Because the average milking cow will produce approximately two calves more than are needed to maintain the size of the herd during its productive life, sexed semen allows dairy farmers to generate higher value out of all of their calves.

[9] Christopher H Knight, "Extended Lactation: Turning Theory into Reality," Advances in Dairy Technology (2005) Volume 17.

16. The end result of this genetic improvement process is that farmers grow milk production per cow and also boost the value of the calves that are not retained but are sold to be raised for beef. Due in large part to this process, the average milk per cow for the United States increased from 18,196 pounds in 2000 to 22,258 pounds in 2014, an increase of 22.3 percent.[10] Also the beef yield for dairy cow breeds has steadily improved and slaughter weights increased 12.7% on average from 1999 to 2007.[11]

17. Every year dairy farmers cull about 30 percent of their milking cows, but the exact level of culling will depend on the relative value of the cow for beef or for continued milking.[12] Every dairy farmer anticipates when it acquires a cow that the cow will be marketed for beef at some point.[13] Because more than 2.8 milllion dairy cows are culled each year, a robust market for dairy cow beef exists for use in hamburger meat and other less expensive cuts of beef.[14] Culled dairy cows and dairy calves raised for beef currently represent about 20% of the total U.S. beef supply.[15]

18. The growing supply of genetically selected replacement heifers has also increased cull rates in recent years by giving farmers an opportunity to increase their production potential through new heifers. Replacement heifers are those that are raised as potential additions to the milking herd and are differentiated from other heifers that are generally sold as

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[10] USDA, NASS, "Milk Production Reports," January 2001, January 2015.

[11] National Cattlemen's Beef Association, "Executive Summary of the 2007 National Market Cow and Bull Beef Quality Audit: Dairy Cattle Edition," December 2007, accessed March 11, 2015 (http://www.bqa.org/CMDocs/bqa/2007AuditDairy.pdf).

[12] *Id.*; USDA, NASS, "Livestock Slaughter," 2001-2015.

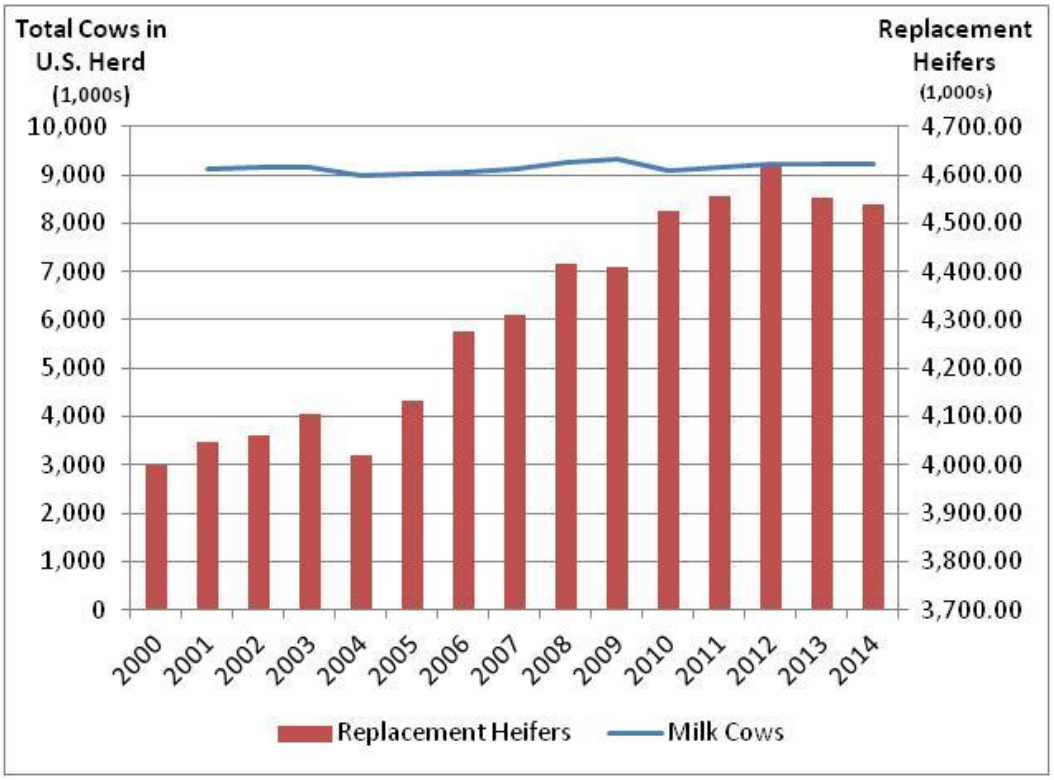
[13] Normand R. St. Pierre, "Culling Rate on Dairy Farms and Its Effect on Income over Feed Costs and Forage Inventory Requirements," Tri State Dairy Nutrition Conference, April 23-24, 2013.

[14] USDA, AMS, "Actual Slaughter Under Federal Inspection" Weekly Reports January – December 2003.

[15] Cattlemen's Beef Board, "Your Beef Checkoff Investment – Helping You Maximize Dairy Cow Market Value," accessed March 11, 2015 (https://www.beefboard.org/producer/CBBFinalDairyBrochure.pdf).

days old calves to be raised for meat. From 2000 to 2014, the number of replacement heifers raised increased by 539,500 head while the number of cows increased just by 18,600 head (Exhibit 1). As a result, the number of replacement heifers per 100 milk cows increased from 44.8 in 2003 to 49.8 in 2011, making the level of replacements per 100 milk cows considerably higher than the normal culling percentage throughout the relevant period.[16] This has resulted in an increase in the percentage of the herd culled each year as older, less productive cows are culled and back-filled with replacement heifers that have greater production potential.[17]

Exhibit 1: Milk Cow Population and Replacement Heifer Availability 2000-2014



Source: USDA, NASS, "Cattle Inventory Reports," January 2001-2014.

[16] USDA, NASS, "Cattle Inventory Reports," 2001-2015; USDA, NASS, "Milk Production Reports," February 2000-January 2001, February 2012-January 2013.;USDA, NASS, "Livestock Slaughter," February 2000-January 2001, February 2012-January 2013.

[17] This opinion is supported by slaughter count values relative to herd size which increased from 29% in 2000 to 34% in 2012. USDA, NASS, "Milk Production Reports," February 2000-January 2001, February 2012-January 2013.;USDA, NASS, "Livestock Slaughter," February 2000-January 2001, February 2012-January 2013.

19. On a regular basis farmers make culling decisions on marginal cows to decide which cows to retain, for how long, and whether replacement heifers offer a better financial return. These decisions are driven by the cow's biological cycle and production, and also by the opportunity costs the farmer faces. The farmer must trade off the margin that he is currently earning on each pound of milk produced against the value of selling the cow for beef and replacing it with a heifer that may have superior genetic potential for producing milk. Milk margins at the farm are driven by many things, but the primary drivers are the price of milk and the costs of feed. When milk prices are high and feed prices are low, margins are high and cows which are on the profitability borderline may be retained for longer periods of time. The opposite is true when margins are low, more cows at the margin of profitability will be sold into the beef market. Farmers may also choose to grow or decrease their overall herd size depending on the margins that they are earning or expect to earn by varying how many heifer replacements are retained in the herd.

20. Specific culling decisions are made for numerous reasons. While the average cow is kept for 3 lactation cycles, there is tremendous variation in when the decision to cull a particular cow is made. Some cows are culled because they have low production, other health problems, behavioral problems, or have difficulty being bred again.[18] Milk production generally peaks during a cow's second or third lactation cycle. After production has peaked, the value of the cow as beef and the value of its "space" in the herd for the production of milk from a new heifer often exceeds its continued value as a milking cow.

21. In order to help farmers make decisions on when to keep cows in the milking herd or to cull them, they often enlist the help of consultants who evaluate the cow's potential using a financial model that incorporates feed costs, milk prices, and beef prices.[19] This helps a farmer to make more informed decisions about managing their herd. Even those farmers who

[18] Abby Bauer, "Low Production Tops the Culling List," Hoard's Dairyman, March 2, 2015.

[19] Greg Bethard and Albert L. Nunes, "What Do Your Fresh Heifers Cost You?," Hoard's Dairyman, accessed March 11, 2015 (http://www.hoards.com/E_calf_heifer/HF09).

do not use sophisticated models and financial consultants still consider the same factors when making decisions about what cows to keep and which to sell into the beef market. [20]

22. The income from a slaughter cow for beef helps to fund the cost of raising replacement heifers or purchasing them on the market.[21] Some dairymen almost exclusively sell their calves to other farmers who raise replacements for sale to other dairy farms, or sell calves for beef and rely on the replacement heifer market to maintain their dairy herd. For these farmers the value of the slaughter cow price will factor heavily into the decision on whether to and when to send a milking cow to slaughter because they are dependent on the slaughter auction revenues to purchase a replacement.

23. Another factor that influences overall culling percentages is the declining number of dairy farms. This declining number of operations has coincided with an increase in the average size of remaining dairy operations. As farms have grown larger their efficiencies have grown with scale. New larger dairy farms come with a large financial cost and many older farmers have decided to exit the industry rather than invest in a new facility to replace their older, smaller operations. This may be because they have health issues, succession issues, or they are tired of the demanding life that dairy farming imposes on them. I have seen this first hand in my work with farmers at the University of Wisconsin's Cooperative Extension. Many Wisconsin farmers who I have worked with exited the dairy industry and retired, while others went into other agricultural pursuits such as crop farming, or raising beef cattle and other livestock. They told me that they were exiting the dairy business for many of the reasons listed above.

IV. THE DAIRY INDUSTRY HAS A COMPLEX STRUCTURE

24. The dairy industry is a multi-layered system of dairy farmers, dairy cooperatives, and dairy plants, all governed by a complex regulatory scheme.

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[20] For example, see the website of the Center for Dairy Profitability, UW-Madison, accessed March 11, 2015 (https://cdp.wisc.edu).

[21] Bethard, "What Do Your Fresh Heifers Cost You?," *supra*.

25. The complexities begin with perishable nature of the product. Dairy farmers milk their cows two, if not three, times a day. This milk must be sold from the farm within 48 to 72 hours or it will spoil. In order to alleviate the burden of finding a buyer for all of their milk, the majority of dairy farmers become members of a cooperative. About 85 percent of farmers in the United States market their milk through 132 dairy cooperatives.[22] Milk demand fluctuates both seasonally and with the day of the week, but cows produce milk every day. Being a cooperative member ensures the farmer that the cooperative will buy all of his milk, regardless of the time of year or day of the week.

26. Dairy cooperatives then negotiate with and supply dairy plants with raw milk to process into fluid milk and dairy products like cheese, butter, non-fat dry milk, ice cream, and yogurt. The minimum price the milk plants must pay for raw milk is regulated by a Federal Milk Marketing Order (FMMO) or a state order.[23] The purpose of the minimum price regulations is to ensure a supply of fresh milk for beverage purposes and to promote price stability and market order, which have long been recognized as benefits to the entire industry (producers and processors alike) as well as the consuming public.[24]

27. One of the ways that FMMO regulations accomplish their purpose is by setting a minimum price for raw milk according to the classification of the product for which it is being

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[22] K. Charles Ling, USDA, Rural Development, "Marketing Operations of Dairy Cooperatives, 2012," Research Report No. 230, May, 2014.

[23] Throughout this report I will use the Federal Milk Marketing Orders and the classifications they use (Classes I-IV) for illustration of many points of milk pricing. There are analogous state level regulatory systems for the class states at issue that are not covered by a Federal Milk Marketing Order. To the extent that there are relevant differences between the state regulations and federal regulations I will note them.

[24] Congress cited three major objectives of the Federal Milk Marketing Orders:

1. To assure consumers of an adequate supply of wholesome milk for beverage purposes, at a reasonable price
2. To promote greater producer price stability and orderly marketing
3. To provide adequate producer prices to assure an adequate current and future Grade A milk supply.

Agricultural Marketing Agreement Act of 1937, (P.L. 75-137).

produced. There are four classes of products under the FMMO system: Class I for beverage milk, Class II for soft manufactured products like cream products, cottage cheese, yogurt and ice cream, Class III for cheese, and Class IV for butter and non-fat dry milk powder. The prices of raw milk to manufacture Class I and Class II perishable products are set higher than the prices for Classes III and IV products that are storable for longer periods of time without spoiling. By paying a higher price for raw milk that goes into perishable products the system provides an incentive to supply the beverage milk and soft manufactured product markets first. The logical extension of this preference for supplying to Class I and Class II markets is that when the supply of milk exceeds actual and reasonably foreseeable demand, it is sold to plants producing Class III and Class IV products. At the same time, Class I and Class II plants do not take the excess milk supply because the products that they produce do not have long shelf lives and cannot be stored to satisfy future demand.

28. These regulations help to smooth out the volatility of milk prices. As recognized by the government's policy objectives, a stable milk price helps to maintain an adequate supply of available milk.[25] Stable prices also allow farmers to plan and keep the boom and bust cycle from bankrupting family farmers during the sustained periods of low profitability that accompany price troughs. Because milk is deemed a household staple, policy also favors a stable price that ensures a full supply of wholesome milk for beverage purposes. This has the added benefit of reducing the negative impact of high prices that a shortage would bring about.

29. As a result of these volatility reducing policies, there has always been excess milk available for use in Class III and Class IV products over at least the last 20 years.[26] One reason that the supply is in excess of Class I and II needs is that cows produce milk at different rates throughout the year, with more milk being produced in the spring than in the fall due to calving schedules, forage food availability, weather conditions, and other biological

[25] *Id.*

[26] Don P. Blayney, "Milk Utilization Patterns in the U.S.," USDA Economic Research Service, April 13 – 15 , 2010, accessed March 10, 2015 (https://www.fsa.usda.gov/Internet/FSA_File/1_3_utiliz_blayney.pdf)

responses.[27] Further, consumer demand for fresh milk and dairy products also varies throughout the year and tends to be greatest in the fall when schools resume and more seasonal food items incorporate dairy ingredients. In order to satisfy the fall demand for beverage and other perishable milk products, farmers wind up producing much more milk than is needed in the spring when their cows' production are at their highest. This situation also plays out on a smaller scale each week. A cow produces milk throughout the week, but the demand for beverage milk and other fresh dairy products varies throughout the week with certain days being more popular days for grocery shopping than others. In order to balance the demand throughout the week to provide enough milk for heavy shopping days, farmers wind up producing "too much" milk on days where demand is lower. The excess milk during both the high production/low demand season (spring) and the low demand days must be used or else it will spoil. This excess milk is the milk that is sent to plants making Class III and Class IV products at lower prices than are paid for Class I or Class II products. These plants help keep the milk supply in balance by absorbing excess milk. In times of shortage relative to demand, the amount of milk available to these plants decreases. This balancing function is well-recognized by all participants in the industry and by the government.

30. The reduction in the supply of U.S. milk production, if any, brought about by CWT's Herd Retirement Program was relatively small.[28] Any small reduction in milk supply in no way reduced or impacted the supply of milk for either Class I or Class II uses. For the existing 10 FMMOs, during the period CWT was operating, Class I used at most 44 percent and

[27] Pine Creek Nutrition Service, Inc., "Promise milk in the spring and components in the fall," Pine Creek Report, February 2014, accessed March 10, 2015 (http://www.pinecreeknutrition.com/themes/pinecreek/assets/docs/PineCreekReport_Feb2014.pdf); Robin Schmal, "Spring Flush Should Not Be Burdensome for Dairy Market," AgWeb: AgDairy Market Update, April 18, 2011, accessed March 10, 2015 (http://www.agweb.com/blog/AgDairy_Market_Update__236/spring_flush_should_not_be_burdensome_for_dairy_market/)

[28] The production from the cows that were subject to the CWT program accounted for between 0.4 percent of the prior year's milk production in 2003 to a high of 2.1 percent in 2009 and averaged 0.8 percent during CWT's operation. USDA, NASS, "Milk Production Reports," 2003-2011; NMPF0017724.

Class II used 14 percent of total milk available (Exhibit 2). On the average sixty billion pounds of additional milk was sold at Class III and Class IV prices that were lower than Class I or II prices. Cooperatives would have gladly sold that excess milk to the Class I or II markets at higher prices had there been sufficient demand, but demand for Class I and II milk products had been fully met. Any non-catastrophic reduction in milk supply would and could only reduce the supply of milk available to manufacturing milk plants for Class III and Class IV.

Exhibit 2 : Class I and II Utilization in Federal Milk Marketing Orders: 2003 – 2011

(Percent Class I)

Federal order	2003	2004	2005	2006	2007	2008	2009	2010	2011
Northeast	45	47	45	46	46	43	44	43	41
Appalachian	70	70	65	66	70	70	70	68	69
Southeast	65	65	62	59	63	68	66	67	65
Florida	85	85	82	84	81	83	86	87	84
Mideast	42	41	36	38	40	42	41	40	40
Upper Midwest	24	26	20	17	17	16	14	13	13
Central	33	38	31	31	39	37	33	33	32
Southwest	44	47	43	36	41	43	40	39	28
Arizona-Vegas	32	33	33	38	37	34	35	33	39
Pacific Northwest	33	33	30	30	32	33	30	28	28
All orders combined	41	44	39	38	40	39	37	35	35

(Percent Class II)

Federal order	2003	2004	2005	2006	2007	2008	2009	2010	2011
Northeast	19	20	20	20	21	20	20	21	24
Appalachian	14	15	16	16	17	17	16	16	15
Southeast	10	12	11	12	12	11	10	9	9
Florida	8	9	8	8	9	8	8	8	9
Mideast	16	17	16	17	18	19	16	16	15
Upper Midwest	6	8	7	6	5	5	2	2	3
Central	10	13	12	13	17	14	12	12	12
Southwest	14	15	3	13	12	12	6	6	8
Arizona-Vegas	7	8	11	9	9	6	8	8	8
Pacific Northwest	8	8	7	6	7	7	7	7	6
All orders combined	12	14	13	13	13	13	11	11	11

Source: USDA, Agricultural Marketing Service, "Federal Milk Marketing Order Statistics," 2003-2011.

31. There are other provisions of FMMO regulations that assure Class I and Class II processors have first claim on the milk supply. These include a mandate that Class I needs must

be met and regulated plants may be required by the Federal Market Administrator to divert milk from other uses into Class I processing if a shortage is experienced.[29]

32. For the reasons discussed above, there was no restriction or shortage of supply to Class I or Class II milk processors during the period and no such restriction or shortage of supply would have been expected to occur as a result of the CWT Herd Retirement Program.

33. When availability of milk for Class III and Class IV plants decreases and wholesale market prices for the products that they produce increase as a result of decreasing availability, the regulated pricing formulas for the minimum prices of milk are adjusted. A formula is used to set the minimum prices for each class of milk, which takes into account market prices for cheddar cheese, butter, dry whey and non-fat dry milk powder. The formula ensures that the minimum price for Class I is almost always higher than the minimum prices for Class III and Class IV. The formula also ensures that Class II milk price is higher than the advanced Class IV price but lower than the Class I price. This results in a feedback loop where higher prices in Class III and Class IV one month will directly result in an increase in the government's formula based minimum prices of milk for Class I and Class II during the next month. As a result, the typical order of minimum prices from highest to lowest is Class I, Class II, Class III, followed by Class IV.[30]

34. For some milk, cooperatives receive a price that is above the FMMO minimum price for that class of milk, sometimes known as over-order prices (OOPs). These OOPs reflect the value that cooperatives deliver to the market for marketing and balancing the milk supply.

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[29] Deposition of Thomas D. Wegner, January 22, 2015 at 278:18-279:5.

[30] The prices for Class III and Class IV move independently, and it is possible for Class IV prices to exceed those of Class III prices at any given time. As a result the Class I price formula uses the "higher of" advanced Class III and IV prices to determine its minimum price. Further, it is possible for short-term changes in the price of cheese to cause an inversion where the actual Class III price is higher than Class I advanced price for a month until the lagged formula price is adjusted. This inversion is referred to as having a negative producer price differential (PPD) because the usual flows of payments from the market wide revenue pool are reversed. In the event of a negative PPD, cheese producers pay money into a settlement pool and fluid bottlers receive the differential payment back from the pool, called a pool draw.

Although in the past processors acquired a larger fraction of their milk directly from individual farmers they increasingly rely on cooperatives to supply them during the class period. As processors shifted away from individual farm contracts, they were able to shift the costs of balancing their supply of milk across seasons and days on to the cooperative. Additionally, many cooperatives handle accounting, testing milk for milk components and quality, and coordinating the logistics of hauling milk from farm to plant. The OOPs paid by processors cover some of the costs of providing these services.

35. Before 1956, OOPs were rare.[31] The occurrence of OOPs grew steadily through 1975 when 96 percent of Federal Orders had OOPs. Today all 10 existing FMMOs have OOPs. This increase in OOPs can be attributed to the increasing role cooperatives play in providing services to processors and to their dairy farmer members. They have assumed additional functions in procuring, assembling, organizing, marketing and disposing of milk supplies that were previously performed by processors. Dairy cooperatives also run their own processing operations for Class III and IV products in order to balance their milk supplies and provide an outlet for excess milk in the rest of the market. Cooperatives have had to cover the cost of these services by charging processors prices over the regulated minimum Class I milk price.

36. Class I processors have been willing to pay dairy cooperatives to perform these services because it relieves them from having to provide those services themselves. Dairy cooperatives provide processors with a more efficient means of adjusting supply to demand by doing it on a broad basis. Without dairy cooperatives assuming the balancing function, Class I processors would bear the cost of procuring raw milk when supplies are short, and disposing of excess raw milk when supplies exceed their demand. Processors also have savings from the accounting and hauling functions provided by cooperatives because they can be done more efficiently with a large number of participating producers. Increasingly, Class I processors have entered into full supply relationships with cooperatives to provide all of the milk they require,

[31] Silvio Capponi, "Over-Order Payments in Federal Milk Order Markets," USDA, AMS (1982).

but no more than they actually need.[32] This relationship benefits both parties and is a reason why OOPs relate to the supply and demand for dairy cooperatives' *services*, not the supply and demand of the underlying product, milk.

V. THERE IS A LONG HISTORY OF MANAGING MILK SUPPLIES THROUGH REGULATED PRICES AND PROGRAMS

37. The federal and state governments have long recognized the importance of managing the milk supply for the public good. Early experiences in history demonstrated that without a framework of incentives and requirements, the dairy industry was prone to wide swings in the availability and price of milk for consumption. These wide swings had a negative effect on consumers of dairy products, as well as the producers, processors, and retailers of them. Many programs were enacted to help curb these wild swings while still allowing the market to self-regulate supplies so that prices remained fair. These programs included the FMMO system, support prices at which the government bought dairy products, and programs that directly managed supply at the farm level.

A. Federal Milk Marketing Orders and Parallel State Marketing Orders Mandate a Full Supply of Milk for Fluid Uses through Classified Pricing Systems and Other Regulations

38. Since the passage of the Agricultural Marketing Agreement Act of 1937 the federal government has had a role in setting the minimum prices for milk in large portions of the country.[33] The purpose of FMMOs is to assure consumers of an adequate supply of milk for

[32] The same benefits of the services provided to Class I processors are applicable to Class II processors. Similar full supply contracts are entered into with Class II processors on a regular basis for this reason, although the value of services provided to Class II processors is generally less because their demand is more consistent on a weekly basis than the demand for Class I.

[33] In California, the state milk marketing order traces its roots back before the creation of the FMMO system to the Young Act of 1935. This system has evolved to look very similar to the federal system, with minor differences that are not relevant to this discussion. *See* Daniel A. Sumner and Norbert L. W. Wilson, "The Evolution of Dairy Price Policy in California: Our Unique System for Distributing Milk Revenue," Agricultural and Resource Economics Update 3(3)(2000):3-6.

beverage use (Class I) and to provide reasonable prices to farmers to ensure that continued supply.[34] This system remains at the center of dairy policy today. By regulating prices and thereby supplies, the FMMO system smoothes the prices paid by consumers and reduces overall volatility of milk prices.[35] The existence of the FMMOs for over 75 years has made the dairy industry very aware of the workings of the regulatory framework. Both private producer decisions regarding supplies and other government programs to assist in supply management depend extensively on the classified pricing system to carry out their effects.

B. Milk Price Support Programs and Milk Supply Programs Like Herd Retirement Programs Similar to The Self-Help CWT Program Have Been an Integral Part of Government Milk Supply Management Programs for Years

39. Historically, the federal government has directly supported milk prices through both the purchase of milk-based commodities and through reductions in the supply of milk at the farm level. From 1950 until 2014, the federal Dairy Price Support Program involved the government purchase of butter, non-fat dry milk powder, and cheddar cheese in order to maintain prices at a specified level.[36] After the government purchased large quantities of commodities in the 1970s and 1980s, the level of support was gradually reduced. After the mid-1990s, the government support prices for dairy commodities fell below dairy farmers' full cost of production and resulted in far fewer government purchases of dairy commodities.[37] Although the role of the program diminished from its peak it remained active until 2014.[38] In

[34] *See* footnote 23, above.

[35] Agricultural Marketing Agreement Act of 1937, (P.L. 75-137).

[36] James J. Miller and Sara D. Short, "The Dairy Industry Since 1970," USDA, Economic Research Service (1988).

[37] Ed Jesse and Bob Cropp, "Basic Milk Pricing Concepts for Dairy Farmers, University of Wisconsin Cooperative Extension, University of Wisconsin-Madison, A3379, 2008.

[38] Randy Schnepf, "Dairy Provisions in the 2014 Farm Bill (P.L. 113-79)," Congressional Research Service, September 15, 2014.

2008 and 2009 when prices for dairy commodities were severely depressed due to a sharp decline in exports among other factors, the federal government stepped in to support prices by purchasing dairy products equivalent to 2.8 billion pounds of milk.[39]

40. In programs that were similar to CWT's Herd Retirement Program but more far-reaching, the federal government engaged in the Dairy Diversion Program and the Dairy Termination programs in the 1980s.

41. The Dairy Diversion Program paid dairy farmers who agreed to reduce the volume of milk that they marketed.[40] Reduced milk production in the short 18 month life of the program totaled 7.5 billion pounds or 5.5 percent of the 1983 U.S. milk production.

42. The impact of the Dairy Diversion Program on milk production and the milk surplus, however, was temporary. Total milk production did decline by 3.04 percent in 1984, but increased 5.66 percent in 1985.[41] Once the program ended most participating dairy farmers increased their milk production as did non-participating dairy farmers.[42] To create a more permanent impact on the supply of milk, the Food Security Act of 1985 authorized the Dairy Termination Program.[43] Dairy farmers submitted bids to sell all of their cows, heifers and female calves (the whole herd) for slaughter.[44] Dairy farmers also agreed to stay out of dairying for five years and not to use or allow the use of the dairy facilities for milk production for the

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[39] USDA, "Fact Sheet: Historical Data Dairy Product Price Support Program Updated Through FY2010", accessed March 11, 2015 (http://www.fsa.usda.gov/Internet/FSA_File/dppsp_fact_sht_hist_data.pdf).

[40] James J. Miller and Clifford M. Carman, "Participation in the Milk Diversion Program," 1986.

[41] USDA, National Agricultural Statistics Service, 'Milk Production Reports," January 1985 and 1986.

[42] Carl E. Zurborg, A History of Dairy Marketing on America, National Dairy Shrine, 2005, p 196.

[43] USDA, Economic Research Service, "The Food Security Act of 1985," Agriculture Information Bulletin No. 497, pp 8-9, 1986.

[44] USDA news release and "Implications of Whole Herd Buyout on Milk Supply-Demand and Short Run and Long Run Farm Milk Prices," Robert Cropp, 1987.

same time period. A total of 39,534 dairy farmers submitted bids. USDA accepted 13,988 bids. A total of 951,619 cows, 346,789 heifers, and 257,995 female calves were slaughtered under the program. About 12.28 billion pounds of milk which was equivalent to about 8.7 percent of the 1985 milk production was removed during the 16 months that the program operated. Total milk production in 1987 was 0.29 percent lower than 1986 levels, but it increased again in 1988 by 1.63 percent.[45]

43. The Dairy Termination Program operated somewhat similarly to CWT's self-help Herd Retirement Program in that dairy farmers submitted bids to exit from dairy farming and to market all of their dairy cows for beef. The number of dairy farmers who decided to exit dairy farming under the Dairy Termination Program, the number of farms eliminated and the pounds of milk removed during this rather short period of time (April 1, 1986 – August 31, 1987) far exceeded the number of dairy farmers exiting the industry and the number of pounds of milk removed during the longer period from 2003 through 2010 in which the Herd Retirement Program operated. Although the Herd Retirement Program operated as a self-funded program within the dairy industry, similar government-funded termination programs to the 1986 Dairy Termination Program have been a topic of discussion and proposals during each of the last three farm bill policy discussions.

VI. CWT'S HERD RETIREMENT PROGRAM PROVIDED NUMEROUS BENEFITS TO THE DAIRY INDUSTRY AND ITS CUSTOMERS

A. Reductions in the Volatility of Total Milk Prices Benefits Consumers and Farmers

44. Milk production can be highly cyclical, resulting in wide swings in both supply and ultimately the regulated price. Volatile and uncertain milk prices leads to inefficiencies in the production and marketing of milk, making investment and planning decisions over a long term difficult. When milk prices are low dairy farmers, cooperatives, and milk processors are exposed to financial stress which leads to production inefficiencies including delays in construction of new facilities due to uncertain return and over or under investment in dairy

[45] USDA, NASS "Milk Production Reports," January 1987, 1988 and 1989 Reports

herds. Programs that help to reduce price volatility help to stabilize prices, encouraging healthy and appropriate levels of investment and producing a more efficient and cost effective dairy industry. To the extent that CWT's Herd Retirement Program accomplished its goal of strengthening and stabilizing regulated milk prices, it would benefit the entire dairy industry and the consuming public.

B. Removing Inefficient Herds Made Way for More Efficient Milk Production

45. The number of dairy herds has been declining for years. In 1950 there were 3,648,000 dairy herds with an average of 6 milk cows. The number declined to 2,949,000 herds in 1970 with average of 18.7 cows. By 1990 herds totaled 193,000 with an average of 51.9 cows.[46] And by 2003 when the Herd Retirement Program began the number of herds had already declined to 86,360 with an average of 105 cows (Exhibit 3).

Exhibit 3: Structure of U.S. Dairy Herds

Number of milk cows	2003 Number	2003 % of herds	2007 Number	2007 % of herds	2012 Number	2012 % of herds
1 to 29	25,045	29.0%	21,705	31.0%	19,400	32.3%
30 to 49	16,805	19.5%	12,270	17.5%	10,100	16.8%
50 to 99	25,800	29.9%	19,330	27.6%	14,800	24.7%
100 to 199	10,980	12.7%	9,011	12.9%	8,300	13.8%
200 to 499	4,765	5.5%	4,359	6.2%	4,000	6.7%
500 to 999	1,700	2.0%	1,720	2.5%	1,650	2.8%
1,000 to 1,999	815	0.9%	920	1.3%	950	1.6%
2,000 plus	450	0.5%	680	1.0%	800	1.3%

Source: USDA, NASS "Milk Production Reports.", February 2004, 2008, and 2013; and http//:future.aae.wisc.edu

46. CWT herds accounted for a relatively small percentage of the licensed dairy herds lost during the period of 2003 to 2010 (Exhibit 4).[47] A number of the CWT herds most

[46] USDA, NASS, "Milk Production Reports."

[47] CWT accounted for a larger percentage of herds lost during 2009 comprising 36% of herds lost, but its overall impact on the rate of herd reductions was still small in aggregate.

likely were planning on selling their herds anyway.[48] A 2007 survey conducted by CWT of Herd Retirement Program participants cited lack of a successor and health problems as major reasons why farmers chose to sell their herd through CWT.[49] Over three-fourths of program participants surveyed were over the age of 50.[50] These problems would have existed without CWT and would likely have caused many of those farmers to exit the dairying business regardless of whether they were paid by CWT or not.[51]

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[48] Declaration of Gregory I. Wickham, *Blakeman v. Nat'l Milk Producers Fed'n*, Case No. 3:12-cv-01246 (S.D. Ill.), ECF No. 75-2.

[49] NMPF0003677.

[50] *Id.*

[51] On the other hand, a portion of farmers who sold their herds for beef with a CWT subsidy planned to reenter dairy farming. The 2007 survey results of Herd Retirement Program participants also showed that 8% of farmers were planning to start milking again with a new herd. CWT news release August 8, 2007. These farmers were free to do so and many did reenter dairy farming. Declaration of Gregory I. Wickham. In fact, even after CWT implemented a modest incentive for dairy farmers to leave the industry for a minimum of one year, some participants chose to forfeit the 10% of their bid held back in order to reenter the business earlier. NMPF0008701- NMPF0008703; NMPF0008698; NMPF0008699. Regardless of whether CWT Herd Retirement Program participants exited dairy farming permanently or not, all of the more than 50,000 non-participating farmers remained free to expand both the size of their herds and their milk production, and in fact they did so.

Exhibit 4: Licensed Dairy Herds 2002-2014

Year	Number of Herds	Change in Licensed Herds	Percent Change in Herds	CWT Participating Herds	CWT Participating Herds as a % of Change in Herds
2002	74,110				
2003	70,375	-3,735	(5.3%)	299	8.0%
2004	66,825	-3,550	(5.3%)	363	10.2%
2005	64,540	-2,285	(3.5%)	442	19.3%
2006	62,070	-2,470	(4.0%)	0	0.0%
2007	59,130	-2,940	(5.0%)	333	11.3%
2008	57,127	-2,003	(3.5%)	387	19.3%
2009	54,932	-2,195	(4.0%)	791	36.0%
2010	53,132	-1,800	(3.4%)	187	10.4%
2011	51,291	-1,841	(3.6%)		
2012	49,281	-2,010	(4.1%)		
2013	46,975	-2,306	(4.9%)		
2014	45,344	-1,631	(3.6%)		

Source: USDA, NASS, "Milk Production Reports, February 2002 through 2014 .

47. While not all CWT herds were small, the majority had smaller herds.[52] Also, on average herds retired through the CWT Herd Retirement Program produced less than the national average of milk per cow (Exhibit 5). Most larger herds have sufficient labor to milk cows three times per day rather than two times per day, use better feed management and herd health technology which typically increases milk per cow. Because the CWT exiting herds and the associated milk production was more than replaced by remaining herds with higher milk production per cow and overall higher milk production efficiencies, total U.S. milk production was increased.

[52] For example, the median size of CWT Herd Retirement Program herds in the 2004 round was 56 cows. *See* NMPF0008704.

Exhibit 5: Herd Retirement Program Participant Herd Size and Production per Cow

Year	Average Size of Herds	Average Production Per Cow	National Average Production Per Cow
2003	109	18,610	18,759
2004	139	17,988	18,960
2005	145	18,323	19,550
2007	159	18,964	20,204
2008 (1)	122	17,572	20,397
2008 (2)	272	19,277	20,397
2009 (1)	275	19,398	20,561
2009 (2)	270	20,550	20,561
2009 (3)	169	19,929	20,561
2010	167	18,743	21,142

Source: NMPF0017724

C. Removing Excess Milk Production Reduced Costs and Increased Efficiencies

48. Based on numerous conversations with dairy industry participants, my opinion is that excess milk production imposes additional costs on the balancing system. CWT was implemented during periods of excess milk production that had depressed farm milk prices.[53] The excess milk production was stretching manufacturing milk plant capacity.[54] There were manufacturing milk plants operated by dairy cooperatives for balancing, and other manufacturing milk plants that had more milk than could be efficiently processed.[55] Dairy cooperatives had to reach out into the market to find other manufacturing plants able and willing to take on more milk.[56] The excess milk often had to be sold at reduced prices before a manufacturing plant operation would take on additional milk. Further, some manufacturing milk plants willing to accept excess milk were located at greater distance than the cooperative's own balancing plants adding to increased transport costs.[57] To the extent that CWT reduced

[53] *See, e.g.*, LOL00000906; LOL00000579; LOL00006719; LOL00001702.

[54] Sybrand Vander Dussen, "My View on Milk Production Increases," Milk Producer's Council Newsletter, November 7, 2008.

[55] *Id.*

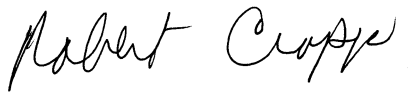
[56] *Id.*

[57] *Id.*

excess milk production, it also reduced the cost of marketing excess milk and improved the operational efficiencies of cooperatives and manufacturing milk plants.

VII. CONCLUSION

49. For all of the reasons stated above, my opinions are 1) that beef marketing is an integral part of dairy farming and the CWT Herd Retirement Program facilitated dairy farmers' reallocation of productive assets from milk production to beef production by subsidizing the marketing of cows for that purpose; 2) that if the CWT Herd Retirement Program had an impact on the supplies of raw milk it did not impact the supply of milk available for Class I or Class II products, but only affected the supply of milk available for Class III and Class IV products; and 3) that to the extent that the CWT Herd Retirement Program had any effect, it benefited consumers and producers through enhanced stability of regulated milk prices, greater efficiencies in production by removing inefficient cows, and reducing the costs of transporting and balancing excess milk.



Robert Cropp

Appendices

Appendix 1

Websites, Documents and Material Relied Upon

I considered the following websites, documents and materials in forming the opinions in my report.

Websites:
Http://future.aae.wisc.edu; this website captures all USDA released reports by USDA, Agricultural Marketing Service (AMS), USDA, National Agricultural Statistics Service (NASS), and USDA, Economic Research Service (ERS) as well as other marketing reports, dairy trade and related dairy information. I relied heavily on this website for data on milk production, milk prices, cow numbers, milk per cow, number of dairy herds, slaughter cow numbers, dairy replacements, structure of U.S. dairy herds, and dairy exports.

http://www.ams.usda.gov; for milk prices, federal milk marketing order statistics
http://www.nass.usda.gov; for milk production, cow numbers, number of dairy herds, slaughtered cow numbers and prices, number of fluid bottling plants
http://www.ers.usda.gov; for structure of U.S. dairy herds
http://www.usdec.org; for dairy exports
http://www.rd.usda.gov; for data on dairy cooperatives and their milk marketings
https://cdp.wisc.edu; for information on farmer considerations in herd management decisions.

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Deposition of Thomas D. Wegner, January 22, 2015 at 278:18-279:5

Plaintiffs' Third Amended Complaint

NMPF0000004

NMPF0003677

NMPF0008698

NMPF0008699

NMPF0008701

NMPF0008702

NMPF0008703

NMPF0008704

NMPF0017724

LOL00000906

LOL00000579

LOL00006719

LOL00001702

Appendix 2

Highly Confidential

January 2015

CURRICULUM VITAE
ROBERT A. CROPP

FORMAL EDUCATION

B.S.:	Agricultural Education, University of Wisconsin-Platteville, 1963
M.S.:	Agricultural Economics, University of Wisconsin-Madison, 1965
Thesis:	Economic Analysis Concerning Commercial Marketing of Sterilized Concentrated Milk in the United States
Ph.D.:	Agricultural Economics, University of Wisconsin-Madison, 1967
Thesis:	An Economic Analysis of Marketing Potential for Sterilized Milk Concentrate in Institutional Markets

CURRENT POSITION

Professor Emeritus, Department of Agricultural and Applied Economics, University of Wisconsin-Madison.

POSITIONS HELD

7/01/06 – present	Professor Emeritus, Department of Agricultural and Applied Economics, University of Wisconsin-Madison
11/04 – 6/30/06	Professor Emeritus and Interim Director of University of Wisconsin Center for Cooperatives.
6/1/90 – 1/01/03	Director of University of Wisconsin Center for Cooperatives and Dairy Marketing and Policy Specialist, University of Wisconsin-Madison. (60% UWCC and 40% Agricultural Economics)
7/1/87 - 5/31/90:	Dean, College of Agriculture, University of Wisconsin-Platteville (43%) and Extension Specialist, UWEX Cooperative Extension Service (57%).
8/1/85 - 6/30/87:	Executive Director of Wisconsin Dairy Task Force 1995 Study (40%) and Extension Specialist, UWEX Cooperative Extension Service (60%).
9/1/66 - 7/31/85:	Professor of Agricultural Economics, Department of Agricultural Industries, University of Wisconsin-Platteville.

HONORS AND AWARDS

Guest of Honor Award presented by the National Dairy Shrine, September, 2013.

Award for Meritorious Service presented by the American Jersey Cattle Association and the National All-Jersey Inc., June 2013.

John S. Donald Excellence in Teaching Award presented by the College of Agricultural and Life Sciences Farm and Industry Short Course, University of Wisconsin, Madison, April 2010.

Distinguished Service Award presented by the College of Agricultural and Life Sciences, University of Wisconsin-Madison, October 2008

Service to Agriculture Award, Awarded by University of Wisconsin Farm and Industry Short Course Alumni Board of Directors, January 2006.

Friend of Cooperative Award. Awarded by AgSoucre Cooperative Services, March 2004.

1st Annual Friend of D.H.I.C. Award, for support of the Eastern Wisconsin D.H.I.C., March 2002

Distinguished Extension Program, The American Agricultural Economics Association, August 2000

Reginald J. Cressman ACE Award Recognizing Commitment To Staff Development, Association of Cooperative Educators, May 1998.

Recognition and Sincere Appreciation for Outstanding Service as an Advisory Member of the Land O'Lakes, Inc. Board of Directors, February 1997.

Friend of Growmark Award, for meritorious service to Midwest Agriculture and Cooperatives, Growmark Inc., September 1995.

Meritorious Service Award, Farmers Union Milk Marketing Cooperative, in recognition of contribution to the cause of family dairy farmers and Upper Midwest agriculture, February 1991.

Distinguish Services to Wisconsin Dairy Industry, Wisconsin Milk Marketing Board, February 1990.

Recognition and Appreciation for Dedication and Service as Professor, Dean and Advisor, Agricultural Alumni Chapter, University of Wisconsin-Platteville, May, 1990

Distinguished Service Award, College of Agriculture, University of Wisconsin-Platteville, 1979, 1981 and 1989.

Outstanding Contributions to the College of Agriculture, University of Wisconsin-Platteville, Alpha Gamma Rho, February 1988.

Man of the Year Award, Tri-State Breeders Cooperative, January 1988.

Award for Professional Excellence, Distinguished Extension Programs - Group Award, American Agricultural Economics Association, August 1987.

University of Wisconsin Extension Award for Excellence, December 1986.

Recognition of Outstanding Leadership for Wisconsin 4-H, Wisconsin 4-H Alumni Association, June 1986.

Distinguished Alumni Award, University of Wisconsin-Platteville, May 1986.

Distinguished Service to Wisconsin Agriculture, awarded by Wisconsin Farm Bureau, December 1985.

Cooperative Builder Award, awarded by Wisconsin Federation of Cooperatives, 1984.

Outstanding Agricultural Education Alumnus, College of Agriculture, UW-Platteville, 1983.

Bronze Eagle Award for Meritorious Service to Agriculture and Cooperatives, awarded by St. Paul Bank for Cooperatives and the Production Credit Associations of Wisconsin, 1983.

Honorary State Farmer Degree, awarded by Wisconsin Future Farmers of America, 1982.

Second Mile Award for Outstanding Service to Wisconsin Agriculture awarded by Wisconsin Association of County Agricultural Agents, 1982.

Distinguished Alumni Award, awarded by University of Wisconsin Extension-Walworth County, 1981.

Distinguished Citation Award for Outstanding Contribution to Cooperative Education and Training, awarded by American Institute of Cooperation, June 1971.

Outstanding Teaching Award, College of Agriculture, University of Wisconsin-Platteville,1968.

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Jesse, E.V. and Cropp, R.A. "Milk Pricing and Federal Milk Marketing Orders: Issues and Problems," a complete set of transparency masters on milk pricing to be used as a teaching tool.

In addition, numerous articles have been written over the years for the popular press.

RESEARCH PROGRAM

My research has focused on milk marketing, milk pricing and dairy policy issues, and agricultural cooperatives. This research activity has had direct application to my extension responsibilities in dairy marketing, dairy policy and cooperatives.

INSTRUCTIONAL PROGRAM

As a professor at University of Wisconsin-Platteville I taught the following courses: Cooperatives, Economic Organization of Agriculture, Agricultural Prices, Commodity Marketing, World Food and Agriculture, Agricultural Law, Dairy Marketing, Research Methods.

As a professor at University of Wisconsin-Madison I taught the undergraduate course in Cooperatives (323) 1990 to 2003 and in 2006 and 2007, and Dairy Marketing and Cooperatives course in the Farm and Industry Short Courses Program 1993 to present.

EXTENSION PROGRAMS

My extension program is directed at dairy marketing, milk pricing, dairy policy, dairy price risk management and agricultural cooperatives. Specific extension program topics include:

(A) Dairy marketing, milk pricing, dairy policy and dairy price risk management
- Dairy situation and outlook (a monthly situation and outlook is prepared)
- Federal dairy programs
- Federal milk marketing orders
- State milk marketing orders
- Dairy policy alternatives
- Multiple component pricing
- Dairy futures and options for farmers and milk processors
- Forward price contracts for milk
- Structural changes in the dairy industry

(B) Agricultural Cooperatives
- Structural changes of cooperatives
- Leadership and management training for boards of directors and managers with specific emphasis on board/manager roles and responsibilities, financial management, strategic planning, business structure, mergers, consolidations, joint ventures and strategic alliances
-Employee and membership education
- Role of cooperatives in rural and urban economic development

Clientele include: dairy farmers, dairy processors and marketers, cooperative boards of directors and managers, employees and members of cooperatives, farm organizations, state and national elective officials, agricultural trade associations, and county extension staff.

TESTIMONY IN COURT PROCEEDINGS (LAST 4 YEARS)

United States et al. v. Dean Foods Co., Case No. 2:10-cv-00059-JPS (E.D. Wis.)

The Aardema Grp. LLC, et al. v. Nw. Dairy Ass'n et al., Case No. CV 2008-5403 (5th Jud. Dist. S.D.)

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