



Agriculture and Markets

KATHY HOCHUL
Governor

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2020 Dairy Promotion Order Annual Report

OVERVIEW

The New York State Department of Agriculture and Markets' Division of Milk Control and Dairy Services is responsible for the administration of the New York State Dairy Promotion Order (NYSDPO).¹ The NYSDPO was proposed and approved by a referendum vote by New York dairy producers to promote the consumption of New York milk and dairy products. Dairy producers have an obligation to the National Dairy Research and Promotion Program of 15 cents per hundredweight of all milk produced. The NYSDPO collects an assessment at the rate of 10 cents per hundredweight. This decreases New York dairy producers' obligation to the national program and allows the 10 cents to remain in New York. The Dairy Promotion Order Advisory Board, comprised of New York State dairy producers, provides advice and recommendations to the Commissioner of Agriculture and Markets on how these funds should be spent, in line with the following goals:²

- Increase youth consumption of New York milk and dairy products (lunches, breakfasts, and other offerings)
- Increase retail sales of New York milk and dairy products
- Improve the image of dairy products and/or dairy producers among consumers, thus improving acceptance and consumption of New York milk and dairy products
- Improve communication with dairy producers to inform them of how they can assist in improving the consumption of New York milk and dairy products
- Increase the sales and consumption of milk and dairy products produced in the US and exported to other countries
- Participate in national programs that influence an increase in consumption of milk and dairy products
- Conduct research projects to ensure the safety of and/or expand the demand for New York dairy products and dairy ingredients

According to the United States Department of Agriculture (USDA), United States per capita consumption of dairy products is increasing. However, the per capita consumption of fluid milk products continues to decline.

¹ Urban Development Corporation Law, Section 16-x

² Ibid

US Per Capita Consumption of Fluid Milk and Dairy Products (pounds)

	2015	2016	2017	2018	2019	% Change 2015-2019
Fluid Milk Consumption ³	156	154	150	146	141	-9.6%
Dairy Product Consumption (including fluid) ³	630	646	645	646	653	+3.7%

The NYSDPO budget for the 2020 contract year had available funds for promotion and research activities of \$14,830,000. During 2020, the NYSDPO contracted with seven organizations, dispensing a total of \$14,825,111.

Award recipients were asked to submit a summary of their work for the 2020 contract year. Their submissions are included below and solely represent the language and opinions of the award recipients and their supporting organizations.

PROMOTIONAL CONTRACTS – SUMMARIES AND METRICS – FOR THE 2020 CALENDAR YEAR

AMERICAN DAIRY ASSOCIATION AND DAIRY COUNCIL (ADADC)

www.AmericanDairy.com

Contract Amount: \$10,500,000

ADADC is a farmer-directed and funded non-profit organization that works to enhance consumers' understanding of and appreciation for dairy farmers and dairy products by engaging local farmers, cultivating a dialogue with consumers, and advancing the dairy industry at the state and national level. ADADC builds sales and consumer trust by creating demand for dairy products through retail, schools, digital/social and traditional media, and enlisting the help of local dairy advocates to "tell dairy's story."

ADADC's time-honored and firmly established local relationships uniquely position the organization to manage a milk marketing plan built on a strategy to maximize resources, utilize partnerships, and implement best practices tested on both national and international markets through its partnership with Dairy Management Inc. (DMI) and the National Dairy Council®.

Its staff is trained to amplify all dairy distribution channels through a fully integrated promotion program that touches consumers in every aspect of their lives—grocery stores, schools, e-commerce platforms, social media and television news, food banks, and even in the McDonald's drive-through lane.

³ Includes revised data from USDA

Through the years, ADADC has adapted to the changing consumer purchasing landscape by updating its key sales channels and upgrading its communications methods. In 2020, ADADC used the following initiatives to achieve its project goals.

Increasing Dairy Sales Through Youth Budget: \$3,605,179

Enhancing dairy sales through an engaged youth market is a priority for ADADC. Based on youth's current dairy consumption, opportunities to add menu items, and the potential to build life-long dairy sales, we believe the Gen Z population is an important and influential audience for the dairy industry.

To reach the youth market, ADADC maintains and ultimately increases milk and dairy sales in schools in three major ways:

1. **Increasing meal participation at meal sites.**
 - Increased meal participation correlates with increased milk and dairy sales.
2. **Ensuring school meals remain part of a healthy school day.**
 - Keeping milk and dairy part of all meals served.
3. **Building and maintaining essential strategic relationships.**
 - Providing critical support to maintain credibility and ability to protect dairy's interests in schools.

In 2020, the COVID-19 pandemic dramatically impacted school meals. Reports indicate that on average in 2020, schools served approximately 40% fewer students because of school closures. Situational realities such as financial drain, supply disruption, and labor shortages due to sickness and deaths, continue to disrupt school meal operations.

As schools closed and the disruption of school meals commenced, ADADC maintained its sales strategy while quickly shifting its focus to support school nutrition directors with ever-changing regulations to ensure they were able to continue serving students and families. ADADC provided updated information on program waivers, food service models, and safety concerns.

Because so much was changing so rapidly, empathy, compassion, and support were needed most. So, ADADC worked to protect its positive, long-lasting dairy farmer relationships with schools through a combination of new ideas imparted through personal phone calls, webinars to share information, and equipment to help schools as everyone worked through new challenges to "getting kids fed" during a pandemic.

ADADC reached 39,186 additional students with Breakfast after the Bell by February 2020, prior to school closures. Data for the remainder of the year continues to be unavailable for 2020 due to program operational changes. Additionally, more than 270 school districts participated in ADADC's annual Strive for 35°F program, which ensures that participants make sure that milk is served at its optimal temperature of 35°F-40°F. Through the years, ADADC has found that corrected temperature issues allow students

to have the best possible experience with milk, which ultimately builds life-long dairy consumers.

1. Increasing meal participation at meal sites.

ADADC's long-term goal for the school market is to recapture milk's position as the beverage of choice among children. ADADC works with school nutrition directors, influential stakeholders, and key decision makers in target school systems to improve the quality, variety, and availability of milk choices and dairy foods. This includes enhancing school meal opportunities that maintain and increase milk and dairy sales in schools.

Breakfast After the Bell (BAB) encourages schools to serve school breakfast in alternative ways to reach more students daily. These alternative ways include, but are not limited to, serving breakfast from a hallway kiosk or in the classroom after the first morning bell. When schools implement a Breakfast After the Bell program, student breakfast participation increases to reach approximately 80% of the students eligible for free and reduced priced meals. When schools only serve breakfast in the cafeteria prior to the first morning bell, "traditional method," student breakfast participation is approximately 20% of the students eligible for free and reduced priced meals. This program focuses on maximizing meal participation by ensuring all students have access to school breakfast.

Increasing participation in child nutrition programs such as school breakfast correlates to increases in milk and dairy sales in schools. However, due to COVID-19 and school closures, meal participation in 2020 decreased by approximately 40%. Thus, ADADC focused its efforts on increasing overall meal participation, including school breakfast, lunch, and summer meals, to ensure that dairy remained integral to those meals.

Schools were supported by ongoing communication through ADADC digital and printed ads and web banners on school nutrition websites and in education journals, as well as weekly e-blasts with updates to regulatory changes, i.e. opportunity to serve "bulk meals" - meaning that schools can use gallons verses 8 oz. cartons of milk to effectively feed more families.

2. Ensuring school meals remain part of a healthy school day.

ADADC also created NutritionConnection.org, filled with school nutrition director resources including dairy-centric menus to support dairy sales. 375 schools received essential equipment to facilitate meal service and keep milk and dairy cold. ADADC's yogurt program increased yogurt sales by 190 percent across 11 targeted school districts when schools added yogurt smoothies and parfaits and purchased more individual yogurt cups for school menus. The cheese program increased sales by 83% across 13 school districts.

New York Thursdays is a school meal initiative that brings local, farm-fresh foods to students throughout the school year. The Department of Agriculture and Markets' successful partnership with the school system in New York City has led to the expansion of the program throughout New York State. Students watched a video to learn about local

dairy farmers and where the dairy served in schools comes from, and schools with a minimum of 50 views were eligible to receive prizes. More than two thousand schools participated with 14,565 visits to the website and 8,700 downloads through menu enhancement programs.

Fuel Up to Play 60 (FUTP 60) is the dairy checkoff partnership with the National Football League to promote eating healthy foods, including milk, cheese, and yogurt. This school program seeks to protect the future market for milk and dairy foods and is active in more than 73,000 public schools across the US. Approximately 4,429 schools were enrolled in the program in New York State in 2020. FUTP 60 helps ADADC gain access to schools and school decision-makers to implement strategies that optimize dairy sales in schools.

Implementing FUTP 60 consists of three major strategies to reach key stakeholders and decision makers at school districts: recruit, engage, and retain.

In a normal school year, these program strategies would have been held in-person and used NFL assets, i.e., stadiums, training facilities, and the like. These events would have incurred expenses such as catering, security, student transportation, youth rewards, guest speakers, and travel. Due to school closures in March 2020, ADADC instead pivoted and planned virtual experiences to replace five in-person events.

ADADC hosted two virtual focus group events to assist in clarifying what was needed by our key stakeholders, which included students, parents, educators, and district administrators. It found and filled the following gaps:

- ADADC created the [Fuel Up to Play Challenge 60](#) which offered:
 - Youth challenges for rewards and recognition.
 - Dairy centric recipes that were created and tested by other youth.
 - Encouragement for students to request their favorite dairy recipe on school menus.
 - Encouragement for students to obtain school meals daily.
 - Workout videos from local athletic coaches.
 - Cooking classes to support youth preparing dairy centric meals at home.
 - Opportunity for New York State athletic sections to win equipment to support social distancing in athletics.
- ADADC hosted three Virtual FUTP 60 events in the summer 2020.
- ADADC hosted three Virtual FUTP 60 kickoff events in fall 2020. Students could interact with other students, ADADC staff, teachers, NFL players, chefs, and others.
 - The costs of the in-person events were shifted to support these virtual events. The expenses that were incurred for these events consisted of: program emcee; at-home dairy centric food kits i.e., pizza kits; a popular take home school meal; program incentives and rewards for student engagement to reach program milestones; t-shirts; and guest VIP speakers.
 - Because the event was not confined to a physical location, ADADC was able to invite twice as many students to participate in each event.

- ADADC was able to bring large numbers of students virtually to dairy farms during the virtual events.
- ADADC continued to provide regular FUTP 60 rewards to students and advisors that participate in programming i.e., monthly NFL-themed touchdown rewards.
- ADADC created a digital nutrition series, which promoted healthy eating and physical activity direct to (K-12) educators.
- ADADC used NFL players and New York high school coaches to create at-home physical activity kits so students could stay active while at home, and paired them with dairy centric recipes i.e., yogurt parfaits that they or their parents could make for them at home.

3. Building and Maintaining Essential Strategic Relationships.

Healthy School Environment. This program forges sustaining partnerships with influential child nutrition and key stakeholder organizations to obtain support with strategic groups like New York State School Nutrition Association, Share Our Strength, and the New York City Coalition Against Hunger. This includes exhibiting at key school nutrition conferences and facilitating seven state breakfast coalitions to gain grassroots support for ADADC's school programs.

This program:

- Shifted to virtual and held seven conferences reaching larger target audiences.
- Conducted school nutrition taskforce meetings and school administrator forums to identify and problem solve unprecedented school nutrition program challenges.
- Collaborated on a bi-weekly basis with anti-hunger advocates to problem solve solutions to support students' access to free meals.
- Attended quarterly New York City school nutrition partnership meetings to assist with meal participation.

In addition to working with the school nutrition decision makers, ADADC maximizes dairy farmer dollars through an intense education program that includes not only the students, but also the parents, health professionals and high school coaches. The goal is to help these important audiences understand and recognize the importance of consuming milk and dairy foods as part of a balanced, healthy lifestyle.

Working with Reputational Thought Leaders - ADADC's staff of three registered dietitian nutritionists collaborate with a variety of health association partners, including the local New York Affiliates to American Academy of Pediatrics, Academy of Family Physicians, National Medical Association, and National Hispanic Medical Association, with a common goal of fostering a healthier nation.

ADADC works with these organizations and their leadership to provide support for annual meetings and experiential learning events, like educational webinars and virtual dairy farm tours, and to keep them up-to-date on the latest dairy research and trends. Additionally, organizations provide letters of support for the expansion of *Breakfast After the Bell* and inclusion of flavored milk in schools. These key reputational thought leaders

also act as third-party dairy advocates and spokespersons to the local media when dairy is challenged.

Most importantly, ADADC builds and maintains trust among these key reputational thought leaders as they help their clients and patients make informed food choices. Health professionals, including pediatricians and family physicians, have significant influence on their patient's dietary choices and can make dairy serving recommendations.

Getting High School Coaches Onboard with Chocolate Milk - ADADC's Sports Marketing program was created as schools began to consider banning chocolate milk from their menus and as chocolate milk was gaining momentum as a recovery beverage. As school districts and health departments began to scrutinize the sugar content of foods served in cafeterias, chocolate milk was often seen as an unhealthy beverage option, particularly in New York City. The result was that schools were considering limiting or eliminating chocolate milk from being served in schools. This trend resurfaces annually as activists seek to replace cow's milk with alternative beverages.

ADADC's Sports Marketing program provides a platform for us to promote a positive image of chocolate milk by highlighting its nutritional value and use as a sports recovery beverage.

ADADC's Sports Marketing program sponsors high school athletic associations throughout New York State and the New York City metropolitan area, including the New York State Public High School Athletic Association Inc. (NYSPHSAA) and the Public Schools Athletic Association (PSAL - New York City). Typically, this program also includes other community athletic sponsorships like the National Double Dutch Championship held annually in Harlem, the Rochester Marathon, and the Wineglass Marathon. In 2020, due to the pandemic, the National Double Dutch competition was held virtually and ADADC was the title sponsor. Unfortunately, marathons did not offer sponsorship opportunities in 2020.

While many championship events were put on hold until later in 2021, the onsite activations ADADC regularly executes (like signage, live reads, and milk distribution) are just a portion of the assets of the Refuel with Chocolate Milk sponsorships. The championships are a platform to showcase chocolate milk as the "official beverage of New York high school athletes." Fortunately, the program reaches a large audience through contracted social assets, which were increased in 2020 to make up for those not executed onsite due to cancellations. These additional social assets included:

- Six online nutrition education Instagram webinar series for coaches, entitled "Come Back Stronger."
- Three co-branded social media campaigns with NYSPHSAA to pay tribute to basketball teams, seniors, and scholar athletes.
- An #AtHomeTogether video series of nutrition tips for athletes urging them to maintain their nutrition and physical fitness routines even when at home.

- A video series of motivational messages from Olympic gold medalist and Team Milk Athlete English Gardner.

In 2020, the following dairy promotional events took place before seasons were canceled:

NYSPHSAA Winter Championships:

- Distributed 1,850 chocolate milks for athletes.
- Digital ads, banner ads, live reads, print ads were executed according to our sponsorship contracts.
 - Boys/girls' skiing, Bristol Mountain, Canandaigua, NY
 - Dual wrestling, SRC Arena, Syracuse, NY
 - Wrestling, Times Union Center, Albany, NY
 - Girls' gymnastics, Cold Spring Harbor Jr/Sr High School, Cold Spring Harbor, NY
 - Boys' swimming/diving, Nassau County Aquatic Center, East Meadow, NY
 - Competitive cheer, Rochester Institute of Technology, Rochester, NY
 - Boys' and girls' indoor track/field, Ocean Breeze Athletic Complex, Staten Island, NY

NYSHSFCFA (New York State High School Football Coaches Association) 20th Annual Clinic, Turning Stone, Verona, NY - February 2020:

- Sponsored NY Giants Riley Dixon appearance
- Preseason Refuel Prize Pack drawing
- FUTP 60 & Refuel with Chocolate Milk exhibit

Utilizing Advice from Professional Sports Dietitians - The Sports Nutrition Advisory Panel (SNAP) is a select group of key reputational thought leaders within the New York region with expertise in sports nutrition. These experts bring their unique, unbiased perspectives regarding the consumption of dairy products - including milk, yogurt, and cheese - to athletes of all levels, including middle/high school, collegiate, professional, and recreational athletes, who have a willingness to serve as advocates on behalf of the dairy industry.

This group is led by one of ADADC's registered dietitian nutritionists (RDN) and consists of sports nutrition experts who produce monthly content, as well as videos and webinars, which are shared with high school coaches and athletes.

A primary goal of SNAP is to be a valuable resource to athletes by creating new, relevant, and evidence-based sports nutrition content that includes the use of all types of dairy for optimal sports performance.

In addition, an objective of this program is to engage with a diverse group of sports nutrition experts to build trust and inspire passion for dairy products - including milk, yogurt, and cheese - that will support ADADC in the following ways:

- Engage in focused, meaningful dialogue with sports nutrition experts.

- Gather valuable industry insights and trends in this niche area.
- Produce original, shareable, and targeted content for our audience.
- Maintain mutually beneficial relationships within the sports nutrition industry.

In 2020, the Sports Advisory Nutrition Panel provided 35 different marketing materials (blogs, videos, and webinars) for dissemination to more than 7,700 high school coaches each month. These coaches then had the opportunity to send out the information to their student athletes.

Executing a Comprehensive Retail Sales and Trust Initiative

Budget: \$2,059,093

ADADC's retail marketing strategy maximizes the consumer's time and experience in the dairy aisle, leading to increased dairy purchases. In 2020, ADADC participated in 16 store remodels and three new store builds, all of which featured ADADC's dairy signage package, yogurt dividers, and Farm to Table murals, featuring New York dairy farmers. When combined, these stores added up to more than 490 linear feet of dairy space.

Dairy Aisle Reinvention (DAR) helps retailers identify roadblocks hampering customer access to products and implement solutions. With many retailers installing energy efficient dairy doors and ADADC's enhanced dairy sign package, DAR slows down the customer's journey in the dairy aisle, giving them increased time to make additional purchasing decisions.

Thanks to these consumer-tested tactics, ADADC has been able to:

- Complete Dairy Reinvention Sign packages in 454 retailers.
- Connect consumers to local farmers through actual on-farm photos at 333 retailers.
- Call out specific dairy placements in the dairy aisle, including 960 displays in more than 400 stores.
- Install 27 yogurt dividers with five new test stores at Price Chopper.
 - The yogurt dividers encourage proper product rotation and increase sales by an average of 13% after installation.
- Fit dairy aisles with 36 "cheese pushers" in five test stores at Weis Markets.
 - This spring-loaded cheese pusher system moves the product forward, enabling customers to easily shop the chunk cheese department, increasing sales by 14.2 percent.

Dairy Aisle Performance Program (DAPP) - merchandisers conducted audits during approximately 4,291 store visits to ensure that dairy products were in stock and properly rotated. During store visits, ADADC audits dairy case maintenance so that cases are at optimal temperature, clean, and merchandised properly to maximize sales opportunities.

When the food distribution chain was disrupted and some retailers began placing product limits on milk, ADADC worked with its retail partners to address farmer and customer concerns about those limitations. To assist with product availability, ADADC's retail team

supported store personnel by packing out more than 203,000 units of milk, cheese, and yogurt to ensure that the products were available.

Increasing Milk Distribution by Expanding Channels - In 2020, ADADC facilitated the distribution of more than 477,000 gallons of milk and 300,000 pounds of other dairy products through the Coronavirus Food Assistance Program (CFAP) with processors and distributors. ADADC worked with dairy cooperatives to distribute 112,000 gallons of milk through the Milk Donation Reimbursement program.

ADADC placed 20 milk coolers in small food pantries as a long-range solution for dairy's role in combating food insecurity. To date, more than 57,000 gallons of milk from the Emergency Food Assistance Program (TEFAP) have moved through these coolers.

Enhance Dairy's Image and Usage Among Consumers **Budget: \$1,637,303**

In 2020, ADADC's consumer marketing programs were designed to improve the image of dairy products and dairy producers among consumers, thus improving the acceptance and consumption of New York milk and dairy products.

ADADC proactively placed more than 4,311 news stories throughout the year on local television news, in newspapers, and on radio, reaching a combined total of 35,461,683 media impressions. Two hundred of those stories placed farmers in the "positive media spotlight" to enhance "consumer trust" through association with credible news organizations. ADADC's digital/social media team managed two websites and their associated social media platforms to reach another 59,953,692 consumers.

In 2020, ADADC's communication teams pivoted to become dairy newsrooms and broke records on the number of consumers reached with dairy's powerful stories that seamlessly melded with the ever-changing news cycles during the pandemic.

Meanwhile, ADADC's staff of registered dietitians (RDs) worked with 21 other thought leaders RDs to reach a variety of consumers throughout the State of New York with targeted paid television news segments that focused on sustainability, nutrition, health and wellness, locally produced products, and real enjoyment messaging. Throughout the year, ADADC served as a nutritional reference point for key influencers, secured third-party endorsements on behalf of dairy, armed health professional advocates with consumer tested messaging, and forged strategic partnerships to foster dairy's image with consumers.

Traditional Media – ADADC proactively pitches stories to local news media and places stories on local newscasts throughout the region. This cost-effective use of funding allows us to create and seek out "earned" or unpaid media experiences for our farmers and spokespersons by developing story ideas with a "dairy focus." Once those stories are pitched, ADADC works with reporters and producers to get the stories on air including:

- dairy farmer image stories,
- health and wellness attributes of dairy,

- real enjoyment dairy provides, and
- third party dairy advocates armed with dairy messaging.

While many other organizations have given up on seeking “free” publicity because it is often difficult and time consuming to build those relationships, ADADC has perfected the process. ADADC only uses paid news segments when it needs to control the messaging and/or reach targeted audiences and it does not do traditional advertising. In 2020, the ADADC saw a 192% increase in New York story placements reaching more than 35 million media impressions with a \$3-million-dollar publicity value.

ADADC is especially proud to have carried on the annual tradition of the New York State Fair Butter Sculpture, which is a creative way to highlight dairy farmers and the dairy industry. The livestreamed unveiling went viral, capturing audiences across the globe, putting a spotlight on New York State. In addition, State Fair publicity increased by 144% garnering more than 11,625,452 media impressions for ADADC’s virtual State Fair including more than 28,800 consumer views of the State Fair’s annual celebrity milkshake event.

Website and Social Media – ADADC believes that the right mix of traditional and digital media gives dairy farmers the opportunity to reach current and potential consumers, no matter where they are. In 2020, ADADC used its two websites (AmericanDairy.com and SavorRecipes.com) as content hubs and total web traffic increased 146% (to 986,035) and consumer engagement increased 245% (1,931,153 comments, likes, and shares).

Meanwhile, ADADC’s dairy-centric recipe website, SavorRecipes.com, featured “hands and pans” video shorts and food blogger blogs to reach 17,190,447 consumers, garnering 184,724 website visits and 549,725 social media engagements. Savor also contains an e-commerce tracking system, which allows aspiring chefs to order their recipe ingredients right from the website through entities such as Walmart, Instacart, and Peapod.

Nutrition Influencer Outreach – In 2020, ADADC worked with 74 New York area retail dietitians to enhance dairy’s taste and nutrition preferences of nearly 1,110,350 consumers through grocery circulars, retail websites, e-blasts, and social media placements. ADADC RDs also secured support from the region’s top 10 health professional partners, such as the New York State Academy of Nutrition and Dietetics, for in-school breakfast and flavored milk initiatives. In addition, ADADC maintains a Speakers Bureau including registered retail and sports dietitians that advocate for dairy as it relates to child and sports nutrition and food insecurity.

Experiential Marketing – Despite the pandemic, ADADC’s events team stood with dairy farmers and community partners as it distributed milk and food boxes in person at more than 123 face-to-face events. In addition, it coordinated 89 immersive and memorable virtual events to help deliver dairy messages to consumers. The organization’s “face to face marketing” (in-person or virtual) strategy in 2020 encouraged consumers to participate, activate, and share content, as well as their experiences.

Enlisting Dairy Farmers to Tell Their Story

Budget: \$573,425

In 2020, ADADC attended and presented program information at nine dairy industry meetings and provided 55 dairy farmers with a central role in ADADC consumer-facing programs. Additionally, ADADC provided 93 digital news updates to dairy farmers and industry leaders and 66 placements in dairy trade publications to update and recruit dairy farmers for consumer communications events.

The industry relations team conducted training and provided tools and support for dairy farmers, dairy princesses, and other dairy advocates to tell the dairy story and worked to strengthen the image of dairy farmers with consumers through farmer presence at events and in the media.

Consumer Confidence - With heightened consumer interest in where food comes from, ADADC staff empowers, trains, and supports dairy farmers and advocates to be effective spokespersons through various training workshops and media appearances.

In 2020, ADADC generated 200 positive dairy farmer stories for television, radio, and newspaper and highlighted farmer spokespersons through 45 dairy farmer blogs on ADADC's website. In addition, more than 205 farmers were trained, through Driving Dairy Discussions, to help them prepare positive and effective conversations with consumers about the dairy industry, and 11 farmers received one-on-one training to prepare for media interviews.

Crisis Readiness – ADADC's Core Crisis Team monitored 68 potential issues, including product recalls, on-farm situations, and activist activity, identifying action steps and potential escalation points for each occurrence. The Core Crisis Team continually monitors and assesses dairy news for an impactful crisis plan and responds to all issues in a timely fashion to minimize impact.

Social Media Outreach - DairyFAN (Dairy Food Advocacy Network) is a social media advocacy program that has helped 42 New York farmers share farm life and dairy product stories, resulting in more than 5.5 million impressions on Facebook, Instagram, and Twitter.

Dairy Farm Tours - ADADC supported 65 grassroots farm tours to broaden the consumer reach of dairy farmers and county dairy promotion groups.

Environmental Outreach – ADADC secured dairy presence at four environmentally-focused events and established two new partnerships. ADADC also expanded New York partnerships with the Owasco Watershed Lake Association and the Genesee River Watch. In lieu of in-person farm tours that were not possible in 2020, ADADC provided virtual farm tour links and other online resources to three environmental partners for sharing with their membership – Owasco Watershed Lake Association (OWLA), Genesee

RiverWatch, and Aquatic Education Network. OWLA also participated in ADADC's effort to promote Twin Birch Dairy's US Dairy Sustainability Award.

Dairy Education – ADADC developed educational materials that feature New York dairy farmers and that align with academic standards and meet practical classroom needs. Curriculum topics included sustainability and sustainable nutrition, farm technology, ecology, biology, and cow care and nutrition. Lessons were developed in collaboration with Young Minds Inspired, the nation's leading provider of free educational outreach programs for learners of all ages, and were distributed, both by mail and electronically, to elementary, middle, and high school teachers in 57,785 classrooms.

New Virtual Farm Tours were conducted, and ADADC promoted recorded virtual tours during the pandemic, reaching 265,859 viewers. Additionally, a new "Fun on the Farm" educational video series was launched for kids and families learning at home and reached 3.5 million viewers.

Dairy Princesses – Ninety-seven percent of dairy princesses in New York attained the incentive requirements for the program, including at least 10 school promotions per princess, which reached a total of 10,000 students. Dairy princesses raised a total of \$7,269.69 for Fill a Glass with Hope®.

**ADADC's Participation in National Program - Dairy Management Inc.
Budget: \$2,625,000**

Please see Dairy Management's section for a summary and breakdown of its initiatives and metrics.

NEW ENGLAND DAIRY PROMOTION BOARD (NEDPB)

<https://www.mustbethemilk.com/>

Contract Awarded: \$1,650,000

Since 1920, New England Dairy Promotion Board, a dairy checkoff organization, has represented New York and New England dairy farmer interests in schools and with thought leaders, the dairy supply chain, and media to promote dairy's science-based health benefits and sustainable farming practices. We are staffed by registered dietitians and marketing communications professionals. Our focus is building trust and sales for dairy in five New England states, a key market for New York dairy. Our programs are informed by current consumer insights and dairy farmer perspectives. By leveraging national and local partners, we maximize program impact and dairy farmer investment.

**New York Priority #1: Increase Consumption of New York Milk and Dairy Products by Youth
Budget: \$511,437**

Program 1: Optimize dairy consumption in school meal programs

- New England Dairy (NED) provided \$360,000 in equipment and grants to 147 school districts. New York dairy farmer funding supported grants to 55 school districts. We

communicated with our state departments of education at the onset of school closures to identify ways to support school meal service. Our conversations made us aware of the need for portable coolers and cold storage to continue serving milk safely to students as schools transitioned to new feeding models.

- We purchased almost 1,700 portable coolers for school districts. New York dairy farmers provided almost \$30,000 toward these coolers.
- Through our 100th Anniversary Grant, we provided grants for equipment needed for new service models during the back-to-school timeframe. New York dairy farmers provided almost \$40,000 toward these grants.
- The schools we supported last spring served a combined total of one million meals and nearly 563,000 pounds of milk per week.
- According to a recent report from the Food Research and Action Center (FRAC), breakfast participation was increased in many states compared to the prior year. This is likely due to meals being bundled for families. Regional breakfast participation numbers are not available from USDA.

Program 2: Connect students to dairy and dairy farming

- With the support of New York dairy farmers, NED reached nearly 3,700 students at live or virtual events with a dairy farmer.
 - Prior to COVID-19 we held five farmer events and farm tours, reaching 3,150 students.
 - Our existing 360° dairy farm tour videos - that focus on sustainable practices, cow care, and environmental stewardship - had more than 2,600,960 views through the investment of New York dairy farmers. Monthly viewership more than tripled at the onset of COVID-19.
 - In October, NED hosted three live virtual farm tours for schools, reaching almost 1,500 students through the investment of New York dairy farmers. Survey results showed that 94% of attendees felt positively about dairy farming after the tours, compared to 81% before the tours.
 - NED fell short of our goal to reach 5,000 students through the investment of New York dairy farmers, but we were able to reach more than double the students than the previous year by providing increased virtual opportunities for students.
- NED continued to drive traffic to the [Dairy in Schools](#) section of our website, resulting in over 11,000 unique visits this year.

Program 3: Reach future consumers and grow champions for dairy

- Through the investment of New York dairy farmers, NED engaged roughly 17,000 students in active Fuel Up to Play 60 (FUTP 60) schools (46,000 students in total). While we were on track to meet this goal prior to COVID-19, school closures and remote learning resulted in decreased activation of FUTP 60 compared to previous years.
- NED created the [New England Dairy Innovation Kit](#) and piloted it with 1,300 students. This kit was designed for both in-person and remote learning and includes two activities geared toward middle and high school students. Lessons on dairy nutrition

and dairy sustainability set the stage for students to develop ideas for improving how dairy is served at their school and how they can help protect the planet. A post survey revealed that 90% of participants increased their knowledge about dairy and dairy farming after completing the kit activities.

- NED provided our 3,600 FUTP 60 schools with a weekly Wellness Huddle e-blast that provided “bite size” resources to share with their school community. This was also an opportunity to promote the new [FUTP 60 Homeroom](#), a digital resource for educators.
- New England Patriots player Chase Winovich became our newest FUTP 60 player ambassador through March 2022.

New York Priority 2: Improve image of dairy products and/or farmers among consumers

Budget: \$698,876

Program 1: Create a positive image of dairy through media relations and digital content development

- This year, NED celebrated National Dairy Month, which takes place each June, on social media, launching our #100MilkMoments social campaign, Instagram farmer takeovers, NED’s first Instagram Live, a NED brand anthem video launch, and other dairy celebration content.
- In October, NED’s Mobile Dairy Bar (MDB) made its debut at drive-in movie theatres through a sponsorship with iHeart Media’s 101.7 The Bull radio station serving the greater Boston area. A donation from HP Hood enabled us to hand out single-serve chocolate milk, the Official Drink of Halloween.
- NED increased our overall social media engagement by 31%, exceeding our 2020 goal of increasing engagement by 5%. NED finished strong in quarter four due to several paid activations centered around the fall and holiday season. Digital influencer partners generated 925,000 impressions.
- NED generated 124 earned media hits resulting in more than 2.5 million impressions through radio, broadcast, print, and online news. Without the support of New York dairy farmers, 46 media placements and more than 1 million impressions would not have happened. Media relations is an efficient and effective means of supporting a robust regional market for New York milk.

Program #2: Grow consumer trust in dairy by connecting them with dairy farmers

- NED invited farmers to participate in events to connect with consumers and bring a face to dairy. These events included a Latte Love influencer event in Boston, virtual farms tours, milk donation events, and digital platform activations. NED connected dairy farmers to more than 6,400 consumers.
- Farm tours build trust in dairy by connecting people with dairy farmers. Due to COVID-19, NED pivoted to live virtual farm tours, which included a real-time video tour and a chat with a dairy farmer. NED reached more than 5,300 people across all tours with 95% of people expressing positive perceptions after the tour.

- NED played a supporting role and led dairy donation events with partners to support dairy farmers and their communities. Through the various initiatives, NED helped find a home for more than 76,000 gallons of milk, plus 47,500 pounds of yogurt and sour cream.
- NED provided two trainings reaching 124 farmers on topics including dairy nutrition messaging, basics of social media, and tips for interacting with the media.

Program 3: Raise consumer awareness of dairy's sustainability and nutrition benefits

- The NED website (NewEnglandDairy.com) was refreshed with new and updated content on dairy sustainability and nutrition. This new content led to more than 7,500 unique visitors to the page.
- NED's social media channels featured content on nutrition, focusing on the new year and National Nutrition Month in March. NED also shared how farmers care for their cows during the cold months and prepare for the spring. New York financial support produced 16 pieces of content per quarter.
- Five resources were updated and made available through our website, allowing NED to ensure the latest information is provided to those seeking information about nutrition ([Make the Most of Your Dairy](#)) and sustainability ([Vermont Dairy & The Environment Resource](#)).
- NED ran a month-long campaign with MassLive to engage consumers with educational messaging around [dairy's benefits for everyday athletes](#) and active families, while building consumer confidence in dairy. Funding from New York farmers helped us achieve 611,000 impressions.

Program 4: Build trust with thought leaders on dairy's position as essential to health and sustainable food systems

- NED conducted a survey with registered dietitians to assess understanding of cow's milk in a plant-based diet and used insights to develop resources including graphics on dairy sustainability and milk verses oat/almond beverages for use in webinars and social content.
- We educated 5,300 registered dietitians about sustainable nutrition and dairy in plant-based diet through mailings and six e-blasts.
- NED led three educational sessions:
 - Sustainability expert Don Layman, PhD as speaker at the Rhode Island and Connecticut Academy of Nutrition and Dietetics virtual conferences.
 - A [webinar series](#) for health and wellness professionals. New York funding helped us reach 670 attendees.
- Our science newsletter launched and reached 296 health and wellness subscribers.
- We activated our Health and Wellness Group including:
 - A highlight of group member Peter Allison, Executive Director of Farm to Institution New England, in the nationally produced [Nourish Dialog Dinner Report](#).
 - Members served as expert speakers on NED webinars.

- NED collaborated with the Community Foundation of Western Massachusetts to secure funds enabling the purchase of \$10,000 of milk for local food assistance agencies.

Program 5: Build trust in pre-professional health professionals and environmental leaders on dairy's position as essential to health and sustainable food systems

- Our work with pre-professionals was heavily impacted when universities moved to virtual learning. However, despite missing our pre-COVID-19 goal, we still interacted with three university intern programs and one university undergrad/graduate dietetic programs with live Zoom classes.
 - We had three dietetic interns (from the University of New Hampshire and University of Massachusetts) with us for several weeks. Each intern worked on NED projects such as contributing to our blogs, summarizing research articles, and completing nutrient analyses of recipes.
- Having strong relationships with universities provides credible third-party support for dairy. In 2020, we launched two university relationships into deeper long-term collaborations. New York funding supported one of these activations.
 - We collaborated with Johnson & Wales University on a fermentation webinar for NED in addition to a homemade Kefir resources.
 - University of Rhode Island (URI) athletics department sports dietitian spoke on our October Protein Webinar about their collaboration with NED on a milk cooler in their athletics recovery room. Their testimonial helps us share the program with other university athletic programs.

New York Priority 3: NEDPB's Participation in national programs influencing an increase in consumption of milk and dairy products

Budget: \$439,687

Please see the Dairy Management Inc. section for a summary and breakdown of its initiatives and metrics.

DAIRY MANAGEMENT INC. (DMI)

Budget: \$3,064,687 (ADADC - \$2,625,000 & NEDPB - \$439,687)

The NYSDPO did not directly award DMI a contract for the 2020 year. However, given the amount of funds contributed to the national program, a summary of DMI's work has been submitted by ADADC and NEDPB

Dairy Management Inc. (DMI), which represents and implements the national dairy checkoff program, works on behalf of America's dairy farmers, including the more than 4,000 New York dairy farmers, along with those that import dairy to the United States, to protect and grow sales and trust in dairy foods, dairy farmers, and the dairy community.

The foundation of this work is a nationwide unified marketing plan that DMI develops and implements in partnership with 16 dairy promotion organizations – including American

Dairy Association North East and New England Dairy – that aligns promotion strategies and activities focused on core priorities.

Accelerating Additional Dairy Product and Ingredient Sales

DMI continued to grow additional dairy sales through targeted partnerships with national foodservice companies Domino's, McDonald's, Pizza Hut, and Taco Bell. Cumulatively, these companies moved dairy through nearly 1,100 stores in New York and nearly 900 stores across New England (Connecticut, Massachusetts, New Hampshire, Rhode Island, and Vermont) in 2020.

Sales innovation included:

- Continued milk growth through specialty beverages, including coffee-based beverages, milkshakes, and smoothies at McDonald's.
- New uses and new ways to feature cheese on pizza.
- Dairy menu innovation with the Whipped Pineapple Freeze (featuring real dairy creamer) and the Grilled Cheese Burrito at Taco Bell, both of which were introduced in 2020.

With the major marketplace disruptions resulting from COVID-19, DMI, working in partnership with ADA North East, New England Dairy, and others, addressed retail stocking issues and workforce constraints that led to milk and other dairy product limits at retail. ADA North East and New England Dairy staff worked at local stores to help restock dairy case shelves and address other category management challenges. Nationally, DMI contacted retail corporate offices to ensure the prompt removal of any dairy case signs that limited purchases. This was a highly coordinated effort among DMI, North East, New England, and other partners.

DMI continued its relationship with ecommerce giant Amazon, now among the top online grocery retailers. DMI staff were identified as dairy "category captains" at Amazon. In this role, staff served as trusted advisors that guided the Amazon dairy team with leading consumer and category insights, recommended ways to enhance the shopping experience for dairy consumers through guided navigation and dairy-relevant features, and provided analysis on product assortment to help Amazon find the right product mix nationally and locally in key dairy categories.

DMI also worked with the Milk Processor Education Program as co-partners leading the Milk Revitalization Alliance. The Alliance, which is made up of DMI, American Dairy Association North East, New England Dairy, and other national, state, and regional dairy organizations, armed national, regional, and local brands and retailers with consumer insights and shopping behavior, dairy category management expertise, and promotion and marketing best practices that will help grow milk sales at retail and beyond.

This work, along with other efforts to accelerate sales, led to

- The launch of 11 new products/promotions among checkoffs' partners.

- Average pizza servings growing more than 10 percent among checkoff foodservice partners Domino's and Pizza Hut.
- Milk volume rising 2 percent at retail in 2020, compared to 2019.
- Cheese volume rising 13 percent at retail in 2020, compared to 2019.
- Yogurt volume rising 4 percent at retail in 2020, compared to 2019.

Building Trust in Dairy Among Youth & Targeted Consumers

Leveraging the increasingly important relationship between consumer trust and intent to purchase and/or consumption decisions, DMI led an industry-wide effort to help protect and grow trust in dairy foods, dairy farmers, and the dairy community through its “Undeniably Dairy” campaign. Undeniably Dairy aims to reach targeted consumers – and those who influence them – who have questions about the food they provide for their families and themselves, and seek assurance that those foods, including dairy, are produced in ways that are good for people and the planet.

In addition, DMI continued to reach New York's and the nation's future consumers through youth wellness efforts that largely focus on creating healthier school environments by focusing on healthy eating, including dairy, and physical activity through the Fuel Up to Play 60 program.

In response to the COVID-19 pandemic, DMI worked in close collaboration with American Dairy Association North East, New England Dairy, and other affiliated organizations to address the hunger and food insecurity challenges that arose following the closing of schools across the country. Leveraging its partnership with Feeding America, DMI worked nationally to bring the broader dairy and food industries together to identify creative solutions to get food to children and families.

These efforts helped build trust through a media partnership with FOX News Channel's “Fox & Friends” that reinforced the essential role of farmers and featured a New York dairy farmer, resulting in a short video that aired multiple times through traditional and social media channels. DMI also amplified information and helped address logistical needs that got more dairy to local schools and food banks by offering food trucks to serve as delivery and distribution centers, and matched farmers, food banks, and processors to get milk and other dairy foods to underserved locations.

Efforts also shifted to address changes in consumer lifestyle and education, including sharing a variety of dairy-centric recipes for the massive increase in at-home cooking, and adapting Fuel Up to Play 60 efforts to help parents and educators keep kids active and learning via virtual farm tours and online activities. In fact, a “Homeroom” program created to address the shift to virtual, at-home learning reached nearly 40 million educators, students, and parents.

DMI, North East, New England, and other state and regional organizations collaborated with Subway in a promotion that supported Fuel Up to Play 60 and dairy in its more than 20,000 sandwich shops. This promotion also was the first time that Subway franchise

owners voted to a nationwide partnership. The promotion encouraged K-12 youth to fill out a Fuel Up to Play 60 program tracker of healthy eating (including dairy) and activity, by allowing youth to purchase a 6-inch sub sandwich on Sundays for only 60 cents – a sandwich that also could be paired with milk. Customers also were encouraged to donate in support of dairy and Fuel Up to Play 60 grants that are used to help support/distribute school meals. The promotion was supported with high-profile, in-store marketing materials.

Through its trust-building efforts, in 2020 DMI and its affiliate organizations:

- Generated more than 5.7 billion earned media impressions.
- Reached the important “Generation Z” audience through a pilot program using influential gamers to raise awareness about dairy’s on-farm sustainable practices that generated nearly 13 million organic video views.
- Generated more than 55 million in-person/virtual experience impressions, including a partnership to address food insecurity through a food drive with the Wounded Warrior Project and Produce for Better Health.

Positioning Dairy in a Global Food System

DMI efforts to position US dairy in a global food system focused on three core areas of work:

- Strengthen scientific and industry action proof points and messages that help demonstrate US dairy’s commitment to sustainable nutrition.
- Solidify dairy’s position in the Dietary Guidelines for Americans (DGAs) for improving health and reducing chronic disease.
- Secure support from targeted thought leaders and decision makers.

As part of this initiative, DMI – working in collaboration with its affiliate organization, the Innovation Center for US Dairy – finalized and announced US Dairy’s 2050 environmental stewardship vision that recognizes and advances the progress and commitment that dairy farmers and the broader dairy community have always had to responsible production. This industry-wide effort has outlined goals by 2050 to collectively:

- Become carbon neutral or better.
- Optimize water use while maximizing recycling.
- Improve water quality by enhancing the use of manure and nutrients.

In 2020, seven new companies and/or organizations joined the stewardship commitment – and 34 companies helped raise awareness – by promoting the US Dairy Stewardship Commitment to their own audiences. Today, companies representing 74 percent of the nation’s milk production have adopted the Innovation Center’s US Dairy Stewardship Commitment.

In all, nearly 700 companies and organizations participated and helped advance farmer priorities through the Innovation Center for US Dairy, US Dairy Sustainability Alliance, or other relevant coalitions by convening and building aligned action throughout dairy. Further, the Innovation Center for US Dairy secured \$30 million in commitments to the

Net Zero Initiative and sustainability goals from partners that included Nestle and Starbucks.

DMI, through the National Dairy Council, also monitored and participated in the public process around the Dietary Guidelines for Americans to share nutrition science and other research that reinforces dairy's role as part of a healthy diet. In December 2020, the US Department of Health and Human Services and US Department of Agriculture announced that the 2020-2025 DGA formally recommended three servings of dairy per day in Healthy US and Healthy Vegetarian eating patterns.

Through its global positioning initiatives, in 2020 DMI/National Dairy Council and its affiliate organizations:

- Published 41 original peer-reviewed research items.
- Realized a positive change in more than 75 percent of thought leaders who engaged in NDC-sponsored Dairy Nourishes Life webinars.
- Shared outcomes of dairy-based research and/or experts with more than 100 media outlets to share dairy's story, including The New York Times and Bloomberg Green.

Engaging Farmers in Checkoff Activities

DMI, North East, New England, and other promotional organizations that support the Unified Marketing Plan engaged national and local dairy farmer promotion board members, next-generation farmers, and others in checkoff-funded programming in 2020.

In response to COVID-19, the shift to virtual meetings and other experiences allowed checkoff organizations to provide timely updates and gain input into checkoff priorities and activities in many ways. In 2020, efforts resulted in:

- Nearly 4,000 farmers engaged in checkoff activities through meeting presentations, speaking opportunities, virtual farm tours, and other activities.
- Nearly 4 million traditional and social media impressions were earned through dairy and agriculture trade media to provide timely updates for farmers on checkoff results and new initiatives.
- Nearly 700 farmer endorsements of checkoff efforts through webinar participation, content sharing through social media, and other efforts.

VENTUREFUEL

www.venturefuel.net/

Contract Amount: \$475,000

VentureFuel builds innovation programs for established companies and industries. Through partnerships with startups and new technologies, VentureFuel helps clients accelerate growth, obtain customer learnings, and provide disruption insurance.

NY MilkLaunch

This first-of-its-kind dairy product innovation competition for New York State was developed to accelerate innovation in fluid milk, increase the demand for milk, and position New York as an innovation leader. VentureFuel built a custom application portal

and reached out to their global network of investors and university labs to source 50 qualified applicants that competed for the \$150,000 prize and committed to sourcing dairy from New York State. Applications included upcycling solutions, novel nutritional applications, colostrum/whey, functional products, sustainability, lactose-free, high-protein, and global flavors. Four finalists received a \$15,000 stipend to develop and refine their product, and virtual mentorship from 11 industry experts across the dairy and beverage industry. Finalists produced 30-second tv-quality commercials and custom video presentations for the live final pitch event, in which 1000 consumers and a panel of judges including the president of Chobani, top beverage venture capitalists, and global chief marketing officers. 29 percent of consumers had a positive change in opinion of milk after learning about the innovative products. The final event was live streamed with 482 views across 202.8 hours of watch time. Press of the program generated 63.2 million impressions and more than \$442,720 in advertisement value. The four finalists project more than 8 million pounds of milk to be sourced from New York dairy farms.

MILK FOR HEALTH ON THE NIAGARA FRONTIER (MFH)

www.milkforhealth.org

Contract Amount: \$450,000

Incorporated in 1949, Milk for Health is one of the oldest dairy promotion organizations in the United States. Milk for Health consists of seven dairy farmer board members from across Western New York, a full-time employee, and recently one part-time employee. Since day one, the goal of the organization has been to support the dairy farmers of Western New York, promote dairy products, and educate the public about the goodness of milk. In 2019, the organization reorganized and took a more modern direction in their programs. The new up-to-date strategy being implemented is much more prevalent for the high-tech, fast paced world of today.

Television

Budget: \$225,000

Milk for Health commercials have been a favorite on Western New York televisions for decades. The COVID-19 crisis caused a significant increase in TV watching. In the US, weekly time spent watching television, both through streaming and conventional methods, grew by more than a billion hours according to a Neilson report. As government restrictions and shelter-in-place orders fluctuated throughout the year, TV usage continued to remain well above pre-COVID-19 numbers. Although people began to have the choice to begin to leave their homes and go more places, they still chose to spend time indoors watching television. Milk for Health capitalized on this trend by ramping up television advertising. Using our non-profit status, media companies granted us low and/or no cost spots allowing us to almost double our goal of impressions ending the year accumulating 14,323,170 impressions of women 25-64 and airing on over 10,000 spots.

Our new commercial highlighting the path from farm to table in 48 hours or less was completed and released right around the new year. It is available to view at <https://youtu.be/0wqVL58xBSA>.

Milk Post Buy 2020

	Impressions	Impressions	# of Spots
	W (25-49)	W (35-64)	
WGRZ CH. 2	4,583,200	6,133,300	378
WIVB CH. 4	1,213,000	3,067,000	239
WKBW CH. 7	661,000	1,546,000	233
WNLO CH. 23	158,000	360,000	54
SPECTRUM CABLE	3,497,356	7,427,484	9,278
Total	10,112,556	18,533,784	10,182
Total Impressions	28,646,340		
Average	2,864,634		

Streaming Media

Budget: \$5,000

Milk for Health made a shift to streaming media in the 4th quarter of 2020. This was a brand-new venture for our organization and we quickly realized there was a learning curve. When we planned to launch our campaigns in the 4th quarter, we were unaware there would be a waiting period for Sling and Hulu after applying to advertise. We were able to begin campaigns with those companies in 2021 but for 2020 we only advertised on YouTube. We aired our Milk Is Amazing commercial. The commercial was viewed 50,025 times, accumulating 108,721 impressions for \$1,322. The view through rate was nearly 50 percent. Now that we have “cut our teeth” with this platform of advertising, we are looking forward to 2021.

Radio

Budget: \$33,000

Overall radio listening was up in 2020. We took this as an opportunity for advertising. In June we added additional spots for June Dairy Month. In July we advertised for the National Ice Cream Month Sweepstakes. For the Christmas season, we created a new ad featuring Santa Claus encouraging kids to leave out whole milk for him and to drink it themselves. Milk for Health also sponsored the Ramblin’ Lou Christmas Show for the 51st consecutive year.

In total, Milk for Health advertised on four stations, all of which also have online streaming. We exceeded our goal of 100 spots with a total of 1,008 spots. We were only able to get post buy information from WYRK, totaling 4,264,800 impressions. Many radio stations do not offer post buy information.

We did exceed our budget by 41 percent due to the Christmas show, and extra volume in June, July and December, but also exceeded in our goal of 220,000 impressions by 1,937 percent.

Platform	Time Slots	Number of Spots
WYRK	Mon-Fri, 6am – 8pm	90 spots
	Mon-Sun, 6am – 10pm	165 spots
	Sat-Sun, 6am – 9pm	90 spots
WYRK.Com (Streaming)	Mon-Sun, 6am – Midnight	360 spots
WMSX	Mon-Sun, 6am – Midnight	60 spots
Total Spots		765 Spots
Reach		427,500
Avg. Frequency		10.0x
Total Gross Impressions	4,264,800 (Does not include the PIG and WXRL)	

Movie Previews

Budget: \$14,500

Like many other industries, movie theaters were hit hard by the pandemic. Theaters across Western New York were shut down on March 14, 2020 and most remained closed until the last week of October. As we discussed in our 4th quarter report, Pecan Pie Productions, the contracting company for the theaters Milk for Health advertises with, has credited Milk for Health with the unused time for the 2021 contract year.

For the time the theaters were open in 2020, the Milk is Amazing commercial aired on 35 screens across 11 theaters, within 2 minutes of the movie start time. Because of the closings, there were only 300,000 views. We are looking forward to the reopening of the theaters in 2021 and more opportunities for views.

Railroad

Budget: \$4,132

The Arcade and Attica (A&A) Railroad suffered in 2020 due to the pandemic. There was hope to be able to still support the North Pole Express train rides, but unfortunately, they were cancelled. The only expenses through the year were signage for advertising for Farm Days on the A&A, which was also cancelled, but the signs will be able to be used for future events.

Explore and More Children's Museum

Budget: \$15,000

Explore and More had to open and close its doors several times throughout 2020. As many know, Erie County continues to be a hot spot for COVID-19. The museum was closed completely for four months and has been open only two days a week at 15 percent capacity towards the end of the year. Overall attendance was 128,258 but their reach for virtual programming was 33,209 for a total of 161,467 participants reached. We were able to participate in several events with them throughout the year.

- **Bite Size Buffalo**
Pre-COVID-19, Milk for Health participated in Bite Size Buffalo, an event that mirrors Taste of Buffalo. Children and their families who participated in the event were able to move through the museum and engage at different stations tasting and/or making food. This event was held two separate weekends. Our volunteers made butter and milkshakes with the attendees.
- **Honk for Heroes**
We were invited to participate in this event for National Heroes Day. Explore and More organized a “reverse parade” where first responder trucks, police, fire department, and dairy farmers lined up, and preregistered families drove through to salute them, see the trucks, and get giveaways. Milk for Health set up with live cows, free milk, and giveaway items. Honk for Hero’s Story Time video can be viewed at https://fb.watch/3r_2HIWlfp/.
- **Find-a-Truck**
Find-a-Truck was a scavenger hunt event organized by the museum. Participants followed a map around the city of Buffalo where different types of trucks were parked in various business parking lots. As participants went along their way, they were able to check off each truck and get goodies at each stop. If they completed the entire map, they were entered to win a prize. Milk for Health was set up with a tractor, a milk truck, and a truck and trailer with a Jersey cow. Participants were able to meet April The Milk for Health Cow and receive free milk donated by Upstate from Batman. April was a huge hit; many passersby even stopped to see her, and some participants came back for a second look.

To go along with the Find-A-Truck event, we created promotional videos about each of the trucks where we gave a little tour of the truck and talked about what it does. These videos were shared on the museum’s social media platforms, and can be viewed at https://fb.watch/3r_7r7iihw/.

- **National Farmer’s Day**
Due to COVID-19, our original plans for the National Farmer’s Day event at Explore and More had to be altered. Instead of highlighting several different types of agricultural commodities during the event, we ended up just focusing on dairy. A local farm allowed us to bring three newborn bull calves that we set up outside of the museum so that museum goers and people enjoying Canalside could come and bottle feed the calves from 10:00 AM until 3:00 PM. Events such as these allow volunteers to answer questions that the public has and to debunk any myths. It also creates memories that children will carry with them for their entire lifetime. Many of the children and parents who participated had never physically touched a cow. Along with the live calves outside the museum, the dairy princesses set up inside and managed a butter making activity for museum attendees.

Because of COVID-19, museum admittance is permitted through prepurchase tickets only. The day prior to the event, the museum informed us to not prepare for many

participants as they had not sold many tickets. After this, we sent them pictures of the calves and we created a post on social media showing what the activity would be that day, and the museum sold out the tickets for that day within two hours of the post.

- **Story Time**

Milk for Health has participated in several story time activities with Explore and More. We have had local dairy farmers read a story about farming and agriculture, which are then shared on the Explore and More's social media and their website for all to view. Check out a few of these videos: https://fb.watch/3r_b9b9mDQ/, https://fb.watch/3r_dj_uDx4/, https://fb.watch/3r_iAF5_4-/.

- **Rob Allen**

Rob Allen performed one walk around at the museum before it closed. During his walk arounds, Rob sets up a trivial wheel that is all about dairy and does small magic tricks to engage the attendees and teach them a dairy fact or two. This has been a great addition to our programming at the museum and we are hoping to continue once COVID-19 restrictions lift.

Virtual STEM Programming

Because of the need to go virtual, Explore and More developed a virtual STEM program that gave viewers an opportunity to take tours around the museum virtually. They invited us to be part of this. Milk for Health brought in Dr. Michael Capel from Perry Vet to show everything about a cow's diet and to make a cow salad. Please follow the link below to see the video (our section is about halfway through). These videos are being shared throughout all the tier one schools in Western New York, along with every school that has affiliation with the museum. Milk for Health went the extra mile to send in someone from our organization to participate in the video, not a museum staff member. The video can be viewed at <https://youtu.be/RPJOZZj236o>.

School Assemblies and Olcott Beach

Budget: \$39,500

Our nutrition-based magic show performances with Rob Allen took a hard hit during the COVID-19 crisis. Rob Allen was able to perform at 64 schools before the shutdown. Originally, we had hoped that he would be able to reschedule the remaining performances in the fall, but with health regulations limiting the number of students allowed in a single area, this was not possible.

Olcott Beach Park was completely shut down for the 2020 summer season.

Luncheons

Budget: \$4,368

The two farmer luncheons we held in 2020 were a huge success. We had a goal of 50 attendees and had a total of 52 farmers from all over Western New York. Attendees were provided a delicious meal and took part in a conversation addressing the hard questions we as dairy farmers face every day. Much of the conversation ended up being about how

to handle social media and the negativity that can come from it. Eileen Jensen from NYAAC joined in helping with both “Chat and Chews”, giving two different perspectives to our attendees. Many of the farmers requested that Milk for Health continued the series and have them again in the fall. Following the luncheons, we saw many of the attendee’s social media pages take it up a notch. We did exceed our budget by \$1,368. This was due to having more people than expected and not accounting for gratuities and tax when budgeting the initial meal.

COVID-19

Budget: \$3,000

We are all aware of the chaos the COVID-19 shutdown caused throughout not only the dairy industry but the world. Orders for restaurants, schools and vending machines were cancelled. Processors had a hard time changing their production lines quickly enough to accomodate the change in demand. Milk For Health teamed up with Upstate Farms to help them find homes for short dated or cancelled products.

We distributed to:

- 11 hospitals, including the VAs,
- 6 nursing homes,
- 5 food banks,
- multiple schools, and
- 25 law enforcement agencies.

In total, we found homes for more than:

- 10,500 pints of milk, and
- 2,358 pounds of yogurt.

We also participated in milk drives including one at Willowbend Farm, LLC.

We increased our social media, TV, and radio presence as people spent more time at home and less time at work and school. Our total expenses accrued for these events totaled \$3,080 which included labor, signage, giveaway bags and coolers, and travel expenses.

Fairs and Other Events

Budget: \$15,000

Everyone was disappointed when county fairs and most other events were cancelled for the 2020 season. Milk for Health’s plan to attend all the county fairs in Western New York, the Great New York State Fair, and various other events, was halted. However, we were still able to be a part of several events throughout the area.

- Youth in Ag Bonanza
In August we had the opportunity to be a presenting sponsor for the Youth in Ag Bonanza at the Erie County fairgrounds. This was an all-breeds livestock event to give

Western New York youth an opportunity to showcase their animals. The event had a total of 1,985 classes and 1,764 entries over three weekends in August. Our sponsorship package included the Milk for Health logo on the t-shirts, signage in and around the show ring, website placements, social media mentions, radio mentions, program advertising, stationary TV advertising, and to be the presenting sponsor for the live stream of the entire show. There were also several media mentions on local news television and radio.

- **Southern Tier Junior Dairy Show**
Milk for Health also was a sponsor for the Southern Tier Junior Dairy Show. This was a junior dairy show held in the Southern Tier of New York. 85 youth from across Western New York and North West Pennsylvania participated in the event. On show day, there were close to 300 people in attendance. Sponsorship included social media mentions, mentions in the program, announcements throughout the show, and signage in the show ring.
- **Alexander Steam Show Christmas Light Contest**
Throughout the Christmas season, Milk for Health had a display at the Alexander Steam Show Christmas Light contest. Our 8-foot-tall light up milk glass and plate of chocolate chip cookies were a favorite of the 4,900 vehicles that drove through the display.
- **Hamburg Festival of Lights**
As was mentioned in our midyear report, the Erie County Fairgrounds invited Milk for Health to be a sponsor of the Festival of Lights event. Our sponsorship package was \$3,750. In addition, we purchased and assembled 1,000 hot chocolate giveaway goodies to be included in their giveaway bags. The event welcomed 29,245 vehicles across 29 nights in December through its drive-through light display. Our sponsorship included radio advertising, radio spots as the attendees drove through the display, signage at the sponsored “8 Maids a Milking” light display, social media mentions, and website placement.

Cooking Classes

Milk for Health was only able to complete one of its scheduled cooking classes for 2020 before the shutdown.

Buffalo City School Program

Budget: \$4,500

After the 4th quarter update and reallocation request in September, the funds for the cooking classes were shifted to the Buffalo City School program. Milk for Health has teamed up with the Say Yes Buffalo program to bring no cost programming to the Saturday Academy program for the Buffalo Community Schools. This program covers the 18 community schools in Buffalo which include 8,000 of the most poverty-stricken children in the district. For 2020, all programs were virtual, but will move back to in-person as the COVID-19 crisis allows. Milk for Health hired a part time employee to oversee this project

at the rate of \$15 per hour, averaging 10 hours per project. Each Saturday during the program, Magdalene presents her project in a private classroom on Zoom to either elementary school children or middle school children. Afterward, she presents again to the main room where it is also live streamed on the Buffalo City Schools' Facebook page. Presenting in the main room is a privilege, as not all the participating organizations for each weekend get to do this. Each weekend the average reach is 1,300 students, plus the family members or care takers home with them. For the four weekends we participated, the program reached more than 5,200 children. Any supplies needed for the classes were provided at no charge by Milk for Health and students were able to pick them up from the school the week before the event so they could work along during the class. Each weekend has its own theme, and we try our best to plan a program to go along with the theme.

- October 10- Pumpkin Palooza
 - For the Saturday Academy Pumpkin Palooza theme, our project was Pumpkin Butter. Magdalene worked with students from kindergarten to eighth grade. They made pumpkin flavored butter. While the children were shaking their cream into butter, Magdalene taught them about the goodness of milk, the essential nutrients, how many servings a day they should be eating, and so on. The kids loved the hands-on activity.
- October 31- Monster Madness
 - For this weekend, the children made Dairy Scary Trail Mix. Magdalene taught the kids how to make trail mix that included dairy products such as yogurt bites. She then taught them how it is similar to a Total Mixed Ration (TMR) and explained what rumen microbes do.
- November 21- The Great Kindness Challenge
 - For this weekend, we focused on dairy cattle care and animal wellness. Magdalene Zoomed directly from the farm and gave a quick tour starting at newborn calves all the way to the cows, while discussing animal welfare.
- December 19- International Winter Wonderland
 - During this weekend, kids were able to “travel around the world” and learn about the 6 major breeds of cattle and their history and characteristics.

We have been asked to continue this programming into 2021 as Milk for Health is the only agriculture related organization working with the program. The following dates are already scheduled:

- February 6, February 13, February 27
- March 6, March 13, March 20, March 27
- April 17, April 24

- May 1, May 8, May 15, May 22
- June 5, June 12

Web/Social Media

Budget: \$45,000

Our social media following continued to grow in 2020. Although we did not reach our goal of 10,000 followers on Facebook, we continued a steady climb to 6,600. We also created an Instagram page and gained 800 followers in a very short time. Both platforms are continuing to slowly grow, gaining a very engaged following. We posted 336 times throughout the year, the majority of which were original content, including 40 videos. The total reach of the Facebook page was 1,228,919, a 59.6 percent increase from 2019, and the Instagram page reach was 84,168. 62 percent of our followers are women and most of them fall in our target audience of 25-40 years old.

The milkforhealth.org website continues to improve as we add content. We now have over 100 easy dairy recipes that can please almost anyone. Our 'For the Kids' section has been expanding with worksheets and an information page for Rob Allen. 2020 taught us that the public is no longer looking for long reads such as blogs, but rather are interested in shorter content. As such, we shifted our energies from the Moms With The Moos blog to other types of posts like TikTok videos, recipe posts, and stories.

Administration

Budget: \$42,000

Our administration costs were slightly higher in 2020 than 2019, as Milk For Health's Executive Director went from being part time to full time. Milk for Health now provides her with health insurance. Overall costs are kept low, as there is no office rental or phone bill. One increase for the 2020 year was hiring a CPA to oversee the accounting. This was suggested by our auditor and is overall a good practice.

NEW YORK ANIMAL AGRICULTURE COALITION (NYAAC)

<https://www.nyanimalag.org/>

Contract Amount: \$150,000

The New York Animal Agriculture Coalition (NYAAC) is a farmer founded and funded not-for-profit organization that strives to enhance the public's understanding of and appreciation for animal agriculture and modern farm practices. NYAAC is effective in doing so by engaging the public in conversations about animal agriculture and empowering farmers to tell their story firsthand.

Vision 2020

Budget: \$90,000

Vision 2020 was implemented to give a modern day look at New York dairy farms. This project was a digital campaign focused on leveraging NYAAC's strong social media

following. By creating videos showcasing a variety of dairy processes and procedures that correlate with producing high-quality dairy products, NYAAC aimed to enhance the positive image of dairy producers and New York dairy products. Our original intent was to be on location throughout the state shooting and capturing video content and interviews. When faced with COVID-19 health and travel restrictions, we were able to capture the first few videos digitally and focus on current events related to food safety, milk on the shelves, and keeping farmers safe during the pandemic. Our videos feature farms and farmers throughout all regions of New York State.

Our following on Facebook grew 63 percent and our Twitter following grew by 38 percent. We boosted each video that was created with keywords and targets resulting in 2.8 million impressions and nearly 800,000 engagements on Facebook. With a smaller Twitter following, we were still quite impressed with the 2.3 million impressions and more than 20,000 engagements that this program resulted in.

Documenting Dairy
Budget: \$10,000

Documenting Dairy was a project that allowed us to showcase, in writing, what is happening on modern dairy farms. We sought out dairy farmers that had a story to share about how they were giving back to their communities, and how they were still farming, despite challenges, utilizing technology and social media to communicate.

The original intent was to have these stories broadcast on local news stations and to have in-person interviews along with written components. Due to COVID-19, this was not possible. Even when focusing on the written component of this project, we were competing with COVID-19 headlines and pitching our stories during an election year. Due to these unavoidable challenges, we were not as successful in media placements as we had hoped. We did, however, feature 25 farmers throughout our 5 written stories about farms located throughout all regions of New York State.

Every story was sent to nearly 20 publications and posted on the NYAAC social media channels. The reach in printed publications was around 50,000 and our social media posts resulted in 20,000 additional impressions. We were also able to feature some of the farmer interviews in selective publications, including the Alpha Gamma Rho newsletter, highlighting the work that NYAAC is doing and the importance of dairy advocacy.

Dairy on the Moo-ve
Budget: \$20,000

"Dairy on the Moo-ve" was developed to provide a positive inside look at animal health, nutrition, crop production, milking procedures, and much more. NYAAC used "Dairy on the Moo-ve", to give the public an opportunity to see firsthand what happens on dairy farms. During this program, NYAAC featured dairy farms of all sizes ranging from 100 to 2,000 cows, as well as conventional and organic dairy farms.

A component of "Dairy on the Moo-ve" was capturing footage and content that will allow us to continue helping others understand and appreciate animal agriculture. We collaborated with a local photographer who specializes in agricultural photography to collect visually appealing photos of farmers and crop production that can be used throughout the year. In addition, we collected videos and interviews from numerous farmers that we will be able to share year-round as well.

The response to "Dairy on the Moo-ve" was enormously positive. Farmers and followers were appreciative of NYAAC finding opportunities to share stories despite many challenges. We went live on location at 20 different farms throughout New York which resulted in more than 1.2 million impressions on the NYAAC Facebook page. The program garnered local and state media attention resulting in 15 media placements at a value of more than \$7,000.

Indulge in Dairy TV Campaign Budget: \$30,000

Due to the cancellation of the 2020 Great New York State Fair, NYAAC reallocated its funding from the Dairy Cow Birthing Center to a TV campaign focused on choosing New York dairy products during the holiday season. The campaign showcased New York dairy farmers and a variety of dairy products. With more families eating at home, grocery shopping for loved ones, and choosing to have small, intimate holiday gatherings, there was a tremendous opportunity to show a connection between dairy farmers and dairy products, which our Indulge in Dairy campaign did.

The Indulge in Dairy commercial was created in collaboration with Spectrum News. We created a 60 second and 30 second time spot. In addition to the two commercial spots, Spectrum created a 10 second billboard ad that stated: "Brought to you by the NY Animal Ag Coalition and New York State dairy farmers." The spots began airing on November 13 and continued through the end of the year. Our TV spot was shown 9,900 times and garnered nearly 5.7 million impressions in 13 different New York media zones. These impressions came from 860,000 households which represents 61 percent of potential households with Spectrum. Our 60 second spot resulted in 724,000 impressions and 256,000 engagements on Facebook, and 256,000 impressions and 3,700 engagements on Twitter.

US DAIRY EXPORT COUNCIL

<https://www.usdec.org/>

Contract Amount: \$100,000

The US Dairy Export Council (USDEC) is a non-profit, independent membership organization that represents the global trade interests of US dairy producers, proprietary processors and cooperatives, ingredient suppliers, and export traders. Dairy Management Inc. founded USDEC in 1995 and, through the dairy checkoff program, is the organization's primary funder. USDA's Foreign Agricultural Service provides export activity support, and membership dues fund the council's trade policy and lobbying activities.

Funding contributed by the New York State Dairy Promotion Order is combined with funds from several other state and regional dairy promotion units throughout the United State to support the “5% Plan.” This plan seeks to raise the share of US dairy production exported to 20 percent. The total funding received in 2020 was \$3,610,000. These funds are used to fund additional staff in key dairy markets worldwide, to create partnerships with foreign entities to incentivize the use of US dairy products, to sponsor creative retail promotions in several markets, and to gather market intelligence on the potential for trade agreements and other market access initiatives which will reduce the barriers to entry for US products. In 2020, despite the ongoing global pandemic, the US increased its share of dairy production being exported to 16 percent and the volume and value of US dairy sales increased in almost all the key dairy import markets.

RESEARCH CONTRACTS FOR 2020 CALENDAR YEAR

CORNELL UNIVERSITY RESEARCH PROJECTS

www.foodscience.cals.cornell.edu/research

Milk Quality Improvement Program (MQIP)

Contract Amount: \$774,080

Individual Project Reports:

The Milk Quality Improvement Program (MQIP) is the core overall dairy foods program at Cornell University, providing research and extension support for raw and finished product quality improvements and product safety in New York. The MQIP provides broad expertise in dairy microbiology, including microbial food safety and spoilage, along with key expertise in training NY dairy manufacturers, playing a critical role in ensuring that New York has a qualified dairy processing workforce.

This program is the only one of its kind in the US, committed to serving the New York dairy industry to ensure a plentiful supply of high-quality dairy products to consumers in New York and beyond.

Dairy Product Quality and Safety Program (DPQSP; MQIP “core” program)

Budget: \$448,400

A critical role that the MQIP plays through the DPQSP is to provide rapid support to the New York dairy industry in the face of quality, safety, or other events that may affect businesses, public health, or the reputation of the entire dairy industry. In 2020, the importance of this role became exceptionally clear as our team of dairy experts rapidly developed and implemented a comprehensive plan to assist and support the New York dairy industry through the COVID-19 pandemic. In addition to these considerable efforts, our team continued to achieve project objectives including; (i) conducting microbiological, chemical, and sensory research on key NY dairy products (i.e., fluid milk and powder), (ii) leveraging NY dairy farmer dollars by obtaining alternative funding

for additional dairy research and extension activities that will ultimately benefit the NY dairy industry, (iii) communicating results of DPO and alternative funded research through peer reviewed journals and lay publications, (iv) training and educating the NY dairy processing sector through extension workshops, and (v) supporting dairy product processing, capacity building, and innovation through consulting and facility services.

Supplemental Project 1 - Identifying Risk Factors for Post-Processing Contamination in School Milk Across New York State
Budget: \$129,800

The quality of fluid milk offered to school children is of the utmost importance as children represent future dairy product consumers who will ultimately make product purchasing decisions for themselves and their own families. Ensuring that children do not have negative experiences with school milk will ensure that these future purchasers will continue to be dairy consumers. Our supplemental project designed to reduce post-pasteurization contamination in school milk thereby improving quality made progress in 2020 by focusing on in-plant observations, interviews, product testing, and continued development of a school milk Monte Carlo model. Four plants were enrolled in the study, and two observational visits were made during 2020 to each of three of those plants. MQIP personnel collected and tested more than 100 samples of unflavored and chocolate school milk for microbiological and sensory quality. Observational and interview results indicate that there are inconsistencies in cleaning and sanitation procedures for school milk filling equipment, with operators indicating that this equipment is particularly difficult to clean. Subsequent interventions strategies will be implemented based on the data collected during 2020.

Supplemental Project 2 - Implementation of *Listeria* Control Strategies in Small Dairy Facilities
Budget: \$86,140

Recalls or foodborne illness due to pathogen contamination of food products can be one of the most detrimental events that occurs for consumers, food businesses, and entire industries. The primary pathogen of concern for contamination in dairy foods is *Listeria monocytogenes*, as this pathogen survives in processing environments for many years, grows at refrigeration temperatures, and has a high mortality rate for people who become ill with listeriosis, the disease caused by *Listeria monocytogenes*. Our supplemental project designed to develop and implement improved control practices for *Listeria monocytogenes* in small and medium New York dairy processing plants made progress in 2020 by focused on recruiting nine processing facilities and commencement of environmental sampling of the processing environment in one of these facilities. While initiation of this project was delayed due to COVID-19, our team has already worked extensively with this processor to reduce the presence of *Listeria* in the processing environment and will start sampling of the remaining eight plants in February 2021.

Supplemental Project 3 - Defining Raw Milk Quality Parameters that Affect Greek Yogurt Yield and Quality

Budget: \$109,740

New York manufacturers more yogurt than any other state in the US, making this product an important contributor to the overall New York dairy portfolio. In particular, Greek yogurt has driven the growth in the yogurt category in New York and beyond. Due to the importance of this product for the New York dairy industry, it is critical that manufacturers of Greek yogurt understand the driving factors that affect yield and quality of this product. Progress in 2020 on Year 1 of our supplemental project designed to define raw milk quality parameters of importance to Greek yogurt yield and quality was limited to the recruitment and training of an expert sensory panel evaluation of Greek yogurt flavor, odor, and texture attributes. Significant COVID-19 associated delays in commencement of this project have resulted in Greek yogurt processing for Objective 1, which involves quantifying Greek yogurt yield and processing performance using raw milk with varying quality parameters, is scheduled for February 2021 with subsequent monitoring and evaluation of Greek yogurt quality (Objective 2).

North East Dairy Food Research Center (NEDFRC) Research Projects

Contract Amount: \$726,031

The NEDFRC was formed to conduct fluid milk and dairy ingredient research, provide applications and technical support for the improvements in milk powder quality, and help establish the next generation of dairy ingredients. The NEDFRC also provides new learning opportunities for the industry with short-course training in dairy food safety and Hazard Analysis and Critical Control Points (HACCP) and dairy processing, including artisan dairy production, with certificate programs in fluid milk processing, cheese making, and yogurt production.

Individual Project Reports:

Project 1: Center Technology Transfer

Budget: \$51,625

Project Leader: Dave Barbano

Objectives: 1) Microfiltration tech transfer, 2) implement analytical methods for process control in dairy plants, and 3) implement milk testing to enable improvement of milk composition quality for dairy product manufacture. Progress has been limited by travel restrictions that prevent on-site work in processing plants and laboratories. We have been working remotely on cheese yield issues in a New York State cheese plant and an oxidized flavor issue in fluid milk. Progress on objective 1 is ongoing with filtration-based beverages being developed in other research projects. For objective 2, we have 5 New York State plants using the samples and equations for process control. For objective 3, we have three New York State laboratories conducting this testing on farm bulk tank milks. We are working an article for Hoard's Dairyman on school lunch milk (based on paper we published in the Journal of Dairy Science). Separately, we are working on an article with

Hoard's on the value of dairy product research from the Northeast Dairy Foods Research Center written for dairy farmers.

Project 2 - Nutritious Spreads and Fillings Using Milk Ingredients

Budget: \$108,560

Project Leader: Ali Abbaspourrad

Objectives 1) Create healthier spreads and nutritious fillings using milk ingredients and simplify the production process so it can be applicable for large-scale production, and 2) determine the possibility of delivering water soluble vitamins and minerals contained in milk ingredients using HIPE approach.

Results: 1) We have created nutritious spreads with a wide range of consistency and textural properties. Moreover, we have simplified the process and ingredients list by using only milk fat and milk protein, 2) we have integrated vitamins as well as amino acids and up to 30% milk protein into the spread formulation, and 3) we have published one manuscript, a second manuscript is in preparation, and an invention has been disclosed to the Cornell Center for Technology Licensing.

Project 3: Vacuum Microwave Drying of Nonthermally Concentrated Milk for the Manufacture of Dairy Powders of Superior Quality and Functionality

Budget: \$99,238

Project Leaders: Joseph Dimpler and Carmen I. Moraru

We used Vacuum Microwave Drying (VMD), a gentle drying technology that does not involve high shear, hot air, and high product temperatures, for drying of skim milk, whole milk, and milk protein concentrates. First, we used concentrated skim milk of 37.5 percent total solids to optimize VMD parameters. The effects of vacuum level (33-133 mbar), specific power input ($1 - 2 \text{ W cm}^{-3}$), and product layer thickness (1 - 4 mm) were studied. Total drying time, product foaming at the beginning of the process, product temperature in the last drying stage, product browning and solubility, and product yield were used to identify optimal VMD parameters. Optimal drying conditions for concentrated skim milk were 2 mm layer thickness, 60 mbar, and 1.29 W g^{-1} specific power input. Layer thickness was the most important processing parameter for controlling product temperature in the final drying stage. Using these optimal conditions, we tested the drying of whole milk powder and protein concentrates. Of all products, protein concentrates have been most challenging to dry. We are now finalizing energy consumption calculations for VMD as compared to traditional processing methods. This project also allowed us to identify other uses of VMD in the dairy industry, such as drying of cream (new project) or starter

Project 4: Improving UHT Shelf-life Cultures

Budget: \$83,543

Project Leader: Sam Alcaine

Objectives: 1) Evaluate MQIPs library of proteolytic *Pseudomonas* to identify 2-3 strains that produce heat-stable proteolytic enzymes, 2) demonstrate the ability of lactose oxidase to control *Pseudomonas* spp in raw milk under typical storage conditions, 3)

demonstrate the subsequent shelf-stability of UHT milk made from proteolytic *Pseudomonas* contaminated raw milk treated with and without lactose oxidase, and 4) demonstrate that there is minimal detrimental sensorial impact on UHT milk made from lactose oxidase-treated raw milk.

Results: 1) We screened 26 isolates, identified 18 with HSP, and selected for use, 2) we demonstrated that lactose oxidase can inhibit *Pseudomonas* outgrowth under normal storage conditions and that this inhibition is further improved with thiocyanate addition, 3) we demonstrated that *Pseudomonas* levels that would be acceptable at time of raw milk receipt can result in age gelation under normal conditions for UHT milk and that the addition of LOX prevented auto growth and thus age gelation in treat UHT milk for over 12 months, and 4) we show that LOX has a small impact pH, but less so than untreated milk with *Pseudomonas* outgrowth. We were unable to do consumer tasting due to COVID-19 restrictions. The results of this work were published in the Journal of Dairy Science in December 2020.

Project 5: Rapid Method for Milk Protein and Fat Quality

Budget: \$121,498

Project Leader: Dave Barbano

Objectives: 1) To develop a FT mid infrared method to measure proteolytic breakdown of milk proteins in raw and pasteurized milks, and 2) to develop a FT mid infrared method to measure lipolytic breakdown of milk fat in raw and pasteurized milks.

Objective 1 progress: We have the reference method validated and a publication of the method in the Journal of Dairy Science has been reviewed and accepted. This method will be used at the reference method for development of rapid mid infrared method to measure protein quality.

Objective 2 progress: We are working on optimization and validation of an accurate GLC reference method for free fatty acids in milk. This method will be used as the gold standard for reference testing in development of the rapid measure method using infrared milk analysis. The project was delayed because graduate students did not have access to the research lab.

Project 6: Fermenting Value for Dairy

Budget: \$94,163

Project Leader: Sam Alcaine

Objectives: 1) Evaluate the fermentation of skim milk and milk concentrates by *Brettanomyces* and related yeast species to produce a galactose-rich fermented milk, and 2) optimize fermentation parameters for galactose production from skim milk and milk concentrates by *Brettanomyces*.

We have run trials with skim milk with several yeast species and shown that with some species we can produce galactose rich product that could then be used in other

processes. We are looking at optimizing this process as well understanding how to leverage those findings for novel products/ingredients.

Project 7: Value-added Products from Lactose-hydrolyzed Skim Milk

Budget: \$99,120

Project Leader: Sy Rizvi

First, the kinetics of lactose hydrolysis by β -galactosidase was determined in samples with varying nonfat dry milk (NDM) concentration and temperature. Lactose-hydrolyzed milk was then spray-dried at various temperatures. Increasing milk solids concentration and lower temperature negatively affected binding affinity and the degree of hydrolysis. Spray-drying of this sample resulted in low water activity (< 0.4) and moisture content ranging from 6.12-8.33%. With increasing exhaust temperature, water activity and moisture content decreased while the yellowish index increased, exhibiting Maillard browning at higher temperatures. Lactose hydrolyzed skim milk powder with and without added fruit powders was utilized to develop several formulations and establish processing parameters for low-temperature, low-shear extrusion. Samples containing up to 70% lactose hydrolyzed skim milk powder were successfully used to generate expanded and crispy products of commercial utility. Other formulations containing added fruit powder and milk protein concentrate were also successfully made into puffed snack foods. Work is in progress to directly add lactose hydrolyzed skim milk concentrate of different concentrations into the extruder in lieu of water to avoid drying and minimize energy consumption. A manuscript has been submitted for publication.

Project 8: Identification of Sources of Undesirable Flavors in Aseptic (UHT) Milk.

Budget: \$68,284

Project Leader: Dave Barbano, Cornell University and MaryAnne Drake, North Carolina State University.

Objectives: 1) Determine the impact of differences in packaging (oxygen permeability of ESL and aseptic packaging material are different) on sensory quality and consumer acceptance of 1% milk, and 2) determine the impact of time of storage (aseptic milk is stored longer than ESL) and temperature of storage (ESL is stored at refrigeration temperature and aseptic at room temperature) on sensory quality and consumer acceptance of 1% milk.

This project is completely dependent on field work and travel between Dallas, Denver, Raleigh, and Ithaca. The processing will be done on commercial equipment in a Danone factory in Texas and their technical center in Denver. The PI and an North Carolina State graduate student need to be on site at the processing factory. Because of COVID-19 travel restrictions by the universities and Danone, we have not been able to progress. Danone is still on board with their funding, even though staffing has changed at Danone. The results of this research project are needed as a part of the family of projects to improve the flavor of shelf-stable milk for the school lunch program, food service, and retail shelf-stable milk and milk-based beverages.

Dairy Promotion Advisory Board Members 2020

Larry Bailey (Board Chair), Fort Ann, New York (DFA Seat)

Kim Nelson, West Winfield, New York (Agri-Mark Seat)

Julie Patterson, Auburn, New York (At-large Seat)

Jason Kehl, Strykersville, New York (Niagara Frontier Cooperative Bargaining Agency Seat)

Sheila Marshman, Oxford, New York (NYS Grange Seat)

LouAnne King, Waddington (NY Farm Bureau Seat)

Dean Handy, St. Johnsville, New York (At-large Seat)

Alicia Lamb, Oakfield, New York (At-large Seat)

Judi Whittaker, Whitney Point, New York (At-large Seat)

Donald Harwood, Perry, New York (Rochester Cooperative Milk Producers Bargaining Agency Seat)

Dairy Promotion Advisory Board Member Meetings Held in 2020

Date	Location
February 11	Syracuse, NY
June 23	Video Conference
July 8	Video Conference
July 27	Video Conference
September 8	Video Conference
September 25 & 28	Video Conference

Note: Dairy Promotion Order Advisory Board meetings are open to the public.