



**Comments by the
National Milk Producers Federation and the U.S. Dairy Export Council,
Request for Information on \$50 Million Non-Traditional Shelf-Stable
Commodities Pilot Program
Docket Number-2024-15919**

August 23, 2024

Molly Kairn
Program and Management Analyst
Foreign Agricultural Service
U.S. Department of Agriculture
1400 Independence Ave SW
Washington, DC 20250

Dear Ms. Kairn,

Our organizations submit the following comments in response to the Request for Information on non-traditional shelf-stable food aid commodities for the Foreign Agricultural Service to consider for its \$50 million pilot program (2024-15919). The National Milk Producers Federation (NMPF) and the U.S. Dairy Export Council (USDEC) appreciate the opportunity to present their views on this important issue.

NMPF develops and carries out policies that advance the well-being of dairy producers and the cooperatives they own. The members of NMPF's cooperatives produce the majority of the U.S. milk supply, making NMPF the voice of dairy producers on Capitol Hill and with government agencies. NMPF provides a forum through which dairy farmers and their cooperatives formulate policy on national issues that affect milk production and marketing. NMPF's contribution to this policy is aimed at improving the economic interests of dairy farmers, thus assuring the nation's consumers an adequate supply of pure, wholesome, and nutritious milk and dairy products.

USDEC is a non-profit, independent membership organization representing the global trade interests of U.S. dairy farmers, dairy processors and cooperatives, dairy ingredient suppliers and export trading companies. Its mission is to enhance U.S. global competitiveness and assist the U.S. industry to increase its global dairy ingredient sales and exports of U.S. dairy products. USDEC and its 100-plus member companies are supported by staff in the United States and overseas in Mexico, South America, Asia, Middle East and Europe.

First, we want to express our strong support for this pilot program and encourage FAS and USDA to ultimately build on the program to consistently incorporate a wider group of nutrient-rich products into U.S. food aid programming in the future. The most recent update of the [Global Report on Food Crises](#)¹ found that at least 281 million people around the world are acutely food

¹ FSIN and Global Network Against Food Crises. 2024. GRFC 2024. Rome.
<https://www.fsinplatform.org/grfc2024>

insecure, up nearly 10 percent from 2022. Looking forward, international conflicts and ongoing droughts are likely to continue to exacerbate global hunger and malnutrition.

Dairy powders can play a vital role in delivering a higher nutritional content in U.S. food aid products. To that end, looking forward, it's critical that USDA and USAID broaden the products that they procure and distribute as U.S. food aid to include U.S. dairy products.

A Variety of Lifesaving Dairy Products

1. Milk Powder to Produce School Milk

First, USDA should consider the use of skim milk powder (SMP) and nonfat dry milk (NFDM) in controlled settings, such as a part of school milk programs or other controlled environment settings that also include adults². Obtained by removing water and milkfat from pasteurized skim milk, both SMP and NFDM are key ingredients that can be used in products such recombined or reconstituted milk.

To mitigate potentially poor water quality in some of these locations, entities utilizing the milk powder would simply need to boil the water prior to mixing it with milk powder – an easy step that is already used in the many food aid scenarios where a porridge of grain blends is served.

USDA should refrain from sending food aid milk powder to uncontrolled settings – such as sending the product home with children or distributing it directly to families for home use – due to the higher risk of breast-feeding displacement that exists in the countries where U.S. food aid programs typically operate.

2. Adding Dairy Components to Nutritionally Fortify Blended Products

Secondly, USDA should consider incorporating SMP/NFDM or Whey Protein Concentrate (WPC) with 30% protein into corn/soy blends to increase the nutritional content of those blends. This is a proven method, best exemplified by "[Supercereal Plus](#),"³ a fortified wheat, soy, and milk blend that is used to prepare a formulated complementary food in the form of a porridge or gruel for young children.

In addition to the Supercereal Plus type approach of combining dairy with food aid grains staples for consumption as a porridge/gruel, both ingredients could also be mixed into other formulations as ingredients to produce other food mixtures enriched by the nutrition of SMP/NFDM or WPC³⁴. Both ingredients are very versatile and offer a source of nutritionally complete protein, which can be used for enriching staple foods that have incomplete proteins such as grains, rice and legumes.

If USDA chooses to proceed with a blending route, we strongly recommend that the \$50 million be made available solely to purchase the non-traditional commodities needed to create these blends, given that the existing CCC funding already sources the traditional components, such as corn and soy.

² Participation in such programs should be limited to children over the age of 12 months to avoid the risk of negatively impacting breastfeeding

³ Reference: <https://supply.unicef.org/s0000296.html>

Despite their nutritional value and the fact that they are shelf-stable, neither milk powder nor whey protein concentrate have traditionally been incorporated into food aid packages in consistently sizable quantities.

Ready-To-Use-Therapeutic Foods

While it is our understanding that Ready-to-Use Therapeutic Foods (RUTFs) and Ready to Use Supplemental Foods (RUSFs) are outside the scope of this specific project, we do encourage continued funding expansions for this critical and lifesaving treatment.

RUTFs are nutrient-packed pastes consisting of milk powder, peanuts, sugar, oil, vitamins and minerals, specially designed to treat severe acute malnutrition, which is the most extreme form of malnutrition and can be fatal if untreated. RUTFs require no refrigeration, no mixing with potentially contaminated water, stay fresh for up to two years and are easy for any parent or caregiver to administer.⁴ RUTFs are made from U.S. commodities sourced in 28 states and are the single most effective treatment for child malnutrition, with a recovery rate of up to 90 percent and a [price tag of just](#) about \$1 per day per child.⁵ RUSFs are similar nutrient-dense pastes, designed for the treatment of moderate acute malnutrition from the age of 6 months, as part of nutritional supplementation programs.

High-Quality, Affordable Nutrition

Across the world, it is [estimated](#) that in 2022, 149 million children under five years of age were stunted (i.e., too short for age), 45 million were wasted (i.e., too thin for height) and 37 million were overweight or living with obesity.⁶ An [impactful contributor](#) in many of these cases is diet quality and malnutrition – the under-consumption of key food groups, including dairy.⁷

Unfortunately, school-aged children globally continue to face complex and systemic barriers to good nutrition – from conflicts to climate change to economic downturns. As [noted](#) by the Global Child Nutrition Foundation – drafted in collaboration with USDA – school meal programs can play a significant and positive role on young children’s nutrition, development and academic performance. However, dairy products are served in only about two-thirds of school meal programs, and in less than half of the programs in lower middle- and low-income countries.⁸

Thankfully, there has been growing recognition around the world that milk should be a component of school meals, best exemplified by Indonesia’s recent pledge to provide free nutritious school meals and milk to all children.⁹ U.S. dairy has already committed to help complement the insufficient domestic production to help make the program a success.

⁴ “What Is Ready-to-Use Therapeutic Food?” *UNICEF USA*, 11 Jan. 2023, www.unicefusa.org/stories/what-ready-use-therapeutic-food.

⁵ *A Proposal for the Biden Administration, Nourish the Future*, June 2021, www.endmalnutrition.org/img/nourishthefuture_paper_v13.pdf.

⁶ *Malnutrition*, World Health Organization, 1 Mar. 2024, www.who.int/news-room/fact-sheets/detail/malnutrition.

⁷ “Early Childhood Nutrition.” *UNICEF*, www.unicef.org/nutrition/early-childhood-nutrition.

⁸ Global Child Nutrition Foundation (GCNF). 2022. *School Meal Programs Around the World: Results from the 2021 Global Survey of School Meal Programs* ©. Accessed at survey.gcnf.org/2021-global-survey

⁹ Kurniawati, Dewi. *Prabowo’s Free Meals Plan Poised to Expand Indonesia Dairy Consumption, Imports*, Reuters, 13 Aug. 2024, www.reuters.com/world/asia-pacific/prabowos-free-meals-plan-poised-expand-indonesia-dairy-consumption-imports-2024-08-14/.

Table 1: Proteins of Cow's Milk

PROTEIN AND PROTEIN FRACTION	COMPOSITION IN SKIMMED MILK (g/L)
CASEIN	
α-s1-Casein	12-15
α-s2-Casein	3-4
β-Casein	9-11
κ-Casein	2-4
WHEY PROTEIN (NON-CASEIN)	
β-Lactoglobulin	2-4
α-Lactalbumin	0.6-1.7
Serum albumin (SA)	0.4
Immunoglobulins	0.45-0.75
Lactoferrin	0.02-0.1

To that end, dairy foods and ingredients, including milk and its derivative products such as milk powder and dairy proteins, can and should be included in the U.S.'s global food and nutrition strategy. These products provide essential nutrients, including high-quality protein, phosphorus, potassium, calcium, iodine, selenium, zinc and vitamins A, B2, B3, B5 and B12, which are often missing in the diets of young children and adolescents.

Dairy ingredients have long been recognized as effective ingredients in products used for the treatment of malnutrition and stunting. Numerous reports and recommendations support the use of dairy protein sources in food aid products, including a [2023 FAO report](#), which noted that milk powder and

other dairy proteins have been used for decades in food-aid products and supplements,¹⁰ such as Ready-to-Use Therapeutic Food (RUTF), to improve nutrition quality, due to the large body of evidence indicating these products are effective in the management of severe acute malnutrition.

Table 2: Amino Acid Composition of Milk Powders, Select MPCs and MPI

AMINO ACID (g/100 g OF PRODUCT)	SKIMMED MILK POWDER ¹	WHOLE MILK POWDER ²	MPC40 ³	MPC70 ³	MPC85 ³	MPI ³
Isoleucine	2.19	1.59	1.69	3.17	3.75	3.83
Leucine	3.54	2.58	3.15	5.83	6.86	6.98
Valine	2.42	1.76	2.04	3.75	4.46	4.51
Histidine	0.98	0.71	0.92	1.70	2.01	2.06
Lysine	2.87	2.09	2.65	4.96	5.90	5.98
Methionine	0.91	0.66	0.66	1.52	1.88	2.01
Phenylalanine	1.75	1.27	1.63	3.00	3.54	3.57
Threonine	1.63	1.19	1.37	2.56	2.98	3.00
Tryptophan	0.51	0.37	0.47	0.87	0.96	1.02
Alanine	1.25	0.91	0.96	1.77	2.11	2.16
Arginine	1.31	0.95	1.19	2.18	2.62	2.66
Aspartic acid	2.74	2.00	2.49	4.60	5.37	5.45
Cystine	0.33	0.24	-	-	-	-
Cysteine	-	-	0.24	0.43	0.51	0.52
Glycine	0.77	0.56	0.55	0.97	1.13	1.15
Glutamic acid	7.57	5.51	6.98	12.95	15.20	15.45
Proline	3.50	2.55	3.03	5.71	6.67	6.95
Serine	1.97	1.43	1.60	3.07	3.57	3.53
Tyrosine	1.75	1.27	1.67	3.23	3.89	3.93

Values reported are for ¹Milk, dry, nonfat, regular without added vitamin A and vitamin D; and ²Milk, dry, whole, without added vitamin D, respectively. ³USDEC: Medallion Labs average analysis of industry samples (MPC40: n=1, MPC70: n=3, MPC85: n=2, MPI: n=4).

¹⁰ FAO. 2023. *Contribution of terrestrial animal source food to healthy diets for improved nutrition and health outcomes – An evidence and policy overview on the state of knowledge and gaps*. Rome. <https://doi.org/10.4060/cc3912en>

As illustrated above, dairy ingredients present several benefits as high quality proteins that are rich in essential, branched chain and sulphur-containing amino acids, which are important for growth. The branched chain amino acids, particularly leucine, play an important role in enhancing and maintaining muscle mass and promoting lean body growth. [According to the World Health Organization](#), “The inclusion of milk powder as an ingredient improves the amino acid profile and it is a good contributor of bioavailable calcium and potassium. In addition, it has a specific stimulating effect on linear growth and insulin growth factor-1 levels in the child and does not contain anti-nutrients.”¹¹

Furthermore, a [2021 systematic review and meta-analysis](#) found that children with severe acute malnutrition who were treated with RUTF containing at least 50% of protein from dairy products achieved significantly higher weight gain, higher recovery rates, and higher weight-for-Age Z scores than those children who were treated with RUTF containing low or no dairy.¹² While RUTF is not part of this pilot program, these findings regarding the value of its dairy content are extremely relevant as USDA weighs which non-traditional products should be incorporated into U.S. food aid through this pilot project.

U.S. food aid programs are some of the most important foreign assistance programs in the world, saving lives and helping millions in need every day. By expanding procurement to include more dairy products that have traditionally been omitted or minimally used in U.S. food assistance, USDA can make an even greater impact.

For more information on this element, please see the following [link](#) to an overview of various scientific publications demonstrating the positive role of dairy for global nutrition and positive health outcomes delivered via food aid.

Product Availability

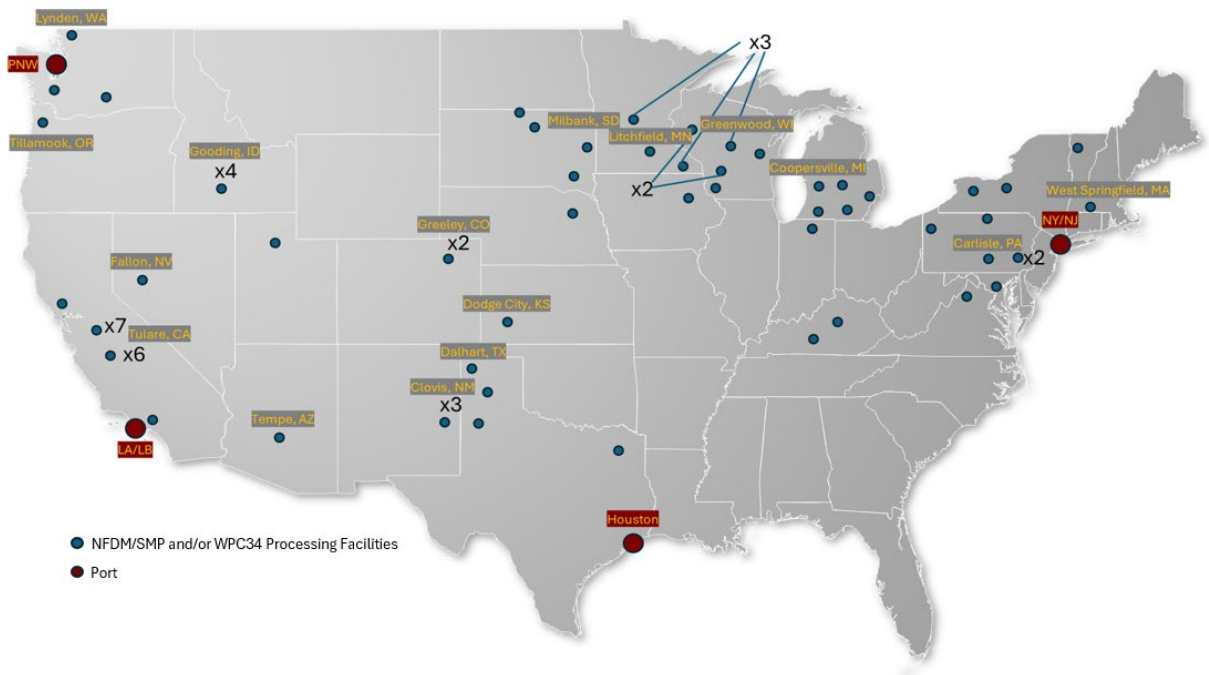
Per USDA data, the U.S. produces over 75,000 metric tons of WPC with a protein content level of 25% - 49.9% per year.¹³ Meanwhile, the U.S. typically produces approximately 1.3 million metric tons of NFDMS/SMP per year. The map below details where production is concentrated in the United States.

¹¹ WHO. Technical note: supplementary foods for the management of moderate acute malnutrition in infants and children 6–59 months of age. Geneva, World Health Organization, 2012.

¹² Isabel Potani, Carolyn Spiegel-Feld, Garyk Brix, Jaden Bendabenda, Nandi Siegfried, Robert H J Bandsma, André Briend, Allison I Daniel, Ready-to-Use Therapeutic Food (RUTF) Containing Low or No Dairy Compared to Standard RUTF for Children with Severe Acute Malnutrition: A Systematic Review and Meta-Analysis, *Advances in Nutrition*, Volume 12, Issue 5, 2021, Pages 1930-1943, ISSN 2161-8313, <https://doi.org/10.1093/advances/nmab027>.

¹³ Reference: <https://downloads.usda.library.cornell.edu/usda-esmis/files/jm214p131/jd474j74j/np194z93v/daryan24.pdf>

U.S. NFDM/SMP & WPC34 Processing Facilities



Affordable Cost

A weekly review of Chicago Mercantile Exchange prices for NFDM throughout 2023 reveals an average of \$1.17 per pound,¹⁴ with SMP prices closely mirroring those of NFDM. Meanwhile, weekly reports from Dairy Market News indicate that WPC34 prices averaged \$1.07 per pound last year.¹⁵ The relatively low cost of both products, combined with ample domestic production capacity, offers the USDA a strong return on investment in nutrient-rich dairy products.

Highly Regulated and Safe

Nonfat dry milk is strictly defined as having no more than 5 percent by weight of moisture, and not more than 1.5 percent by weight of milkfat unless otherwise indicated.¹⁶ Although an FDA standard does not exist for skim milk powder, an international Codex standard exists for it and has the same requirements regarding ensuring the product has no more than 5 percent by weight of moisture, and not more than 1.5 percent by weight of milkfat.

Similarly, finished, dry whey protein concentrate must contain at least 25 percent protein.¹⁷ These products are regulated by – and in compliance with – Food and Drug Administration requirements. For further details on the products’ standards see the prior relevant FDA links in this paragraph.

¹⁴ Reference: <https://www.cmegroup.com/markets/agriculture/dairy/nonfat-dry-milk.settlements.html>

¹⁵ Reference: <https://www.marketnews.usda.gov/mnp/da-home>

¹⁶ Reference: <https://www.ecfr.gov/current/title-21/chapter-I/subchapter-B/part-131/subpart-B/section-131.125>

¹⁷ Reference: <https://www.ecfr.gov/current/title-21/chapter-I/subchapter-B/part-184/subpart-B/section-184.1979c>

For information on the various testing requirements for dairy products, please refer to page 34 of the [FDA's Pasteurized Milk Ordinance](#).¹⁸

Economically Efficient

The costs of producing and shipping NFD, SMP and whey protein can vary depending on a number of industry and macroeconomic factors. However, these rates are typically well within industry benchmarks.

Starting at the production facilities, inland freight shipping for NDM/SMP/WPC to the port-of-exit has averaged about \$1700 per forty-foot intermodal container over the last 12 months, or \$74/metric ton. However, rates vary depending on production facility proximity to a port. The majority of NFD/SMP/WPC products are then either transported to Mexico by land or overseas via the Port of LA/Long Beach (~25%) or the Port of Seattle/Tacoma (~15%). A smaller portion leaves through New York/New Jersey (~5%). SMP/NFD and WPC34 are transported at ambient temperature.

Shipping costs differ based on whether they are contracted or spot rates. Over the past year, contract rates have averaged about 20 percent higher than spot.

Durable and Ready to Ship

Several types of packaging are approved for dairy powders. The more durable and most frequently used type is a multi-wall Kraft paper bag with an inner low-density polyethylene (LDPE) bag liner, both of which are heat sealed. This type of bag construction is referred to as a "bag within a bag".

For commercial sales, packaging differs in the thickness and number of layers of Kraft paper and the thickness and material of the bag liner. The combination of a 3-4 ply multi-wall Kraft paper bag and 3-4 mil thickness LDPE bag liner offers good protection during storage and handling. The LDPE bag liners have vents to allow air to escape from the bag. This prevents rupture during handling and storage. There are different technologies available to reduce the amount of air and moisture getting into the dry dairy product through these vents; the technology varies by bag manufacturer.

USDA specifies bag construction for NFD/SMP for use in food assistance programs in their publication, [Announcement Dairy 6](#).¹⁹ The packaging is to be the equivalent of a 3-ply Kraft paper with a total basis weight of 81.6 kg (180 lbs.) and a LDPE inner liner thickness of at least 3 mil. The maximum water-vapor transmission of the film at 90 - 95 percent relative humidity at a temperature of 37.8°C shall be 0.45 g per 645 square cm in 24 hours.²⁰

The bags are typically piled onto pallets – with a piece of cardboard in between - and shrink wrapped in plastic for ease of storage and transportation. While refrigeration of the dry ingredients is optimal, they are shelf stable. Exposure to high temperature and humidity during storage and transport will merely shorten the shelf-life expectancy of the ingredients, not spoil them.

¹⁸ Reference: <https://www.fda.gov/media/140394/download?attachment>

¹⁹ Reference: https://www.fsa.usda.gov/Internet/FSA_File/dairy6.pdf

²⁰ Reference: <https://www.dairyglobalnutrition.org/safety-and-quality/shelf-life-and-packaging>

Manufacturers conduct shelf-life testing on their respective products in their respective packaging. Typical shelf-life of SMP and NFDM is a minimum of 12-18 months at ambient temperature at maximum relative humidity of 65% dependent upon packaging. WPC34 typical shelf-life is a minimum of 12 months at ambient temperature at maximum relative humidity of 65% dependent upon packaging.

Adverse conditions that might be expected in developing countries (i.e. high humidity and temperatures) could shorten the shelf-life expectancy of these ingredients. However, packaging, including the use of a specific poly liner to allow less transmission, may enhance the protection of the product. NFDM/SMP and WPC 34 can be hygroscopic and tend to attract water from humid atmosphere. Over time, the powders will become more sticky, caked or lumpy and exhibit reduced flowability and solubility. While these changes may affect the ease of use of the product, the color and the flavor, they do *not* represent a health or safety problem. It is only when the powder's moisture content exceeds 15%, that it then becomes susceptible to microbiological growth and should not be used.

Conclusion

Given the nutritional and economic value of the dairy products outlined above, NMPF and USDEC urge USDA to invest in increasing the amount of skim milk powder and nonfat dry milk in school lunch programs around the world, and to bolster its procurement of SMP/NFDM and/or whey protein concentrate 34 to improve the nutritional content of grain-based food aid blends.

On behalf of NMPF and USDEC's 100-plus member companies, we appreciate the opportunity to provide comments on this important issue, and we remain available to provide any further clarification as needed. Should you have any questions, please feel free to contact Shawna Morris, whose contact information is provided below.

Point of Contact:

Shawna Morris

Executive Vice President, Trade Policy & Global Affairs

National Milk Producers Federation & U.S. Dairy Export Council

2107 Wilson Blvd, Suite 600

Arlington, VA 22201

Phone: 703-243-6111