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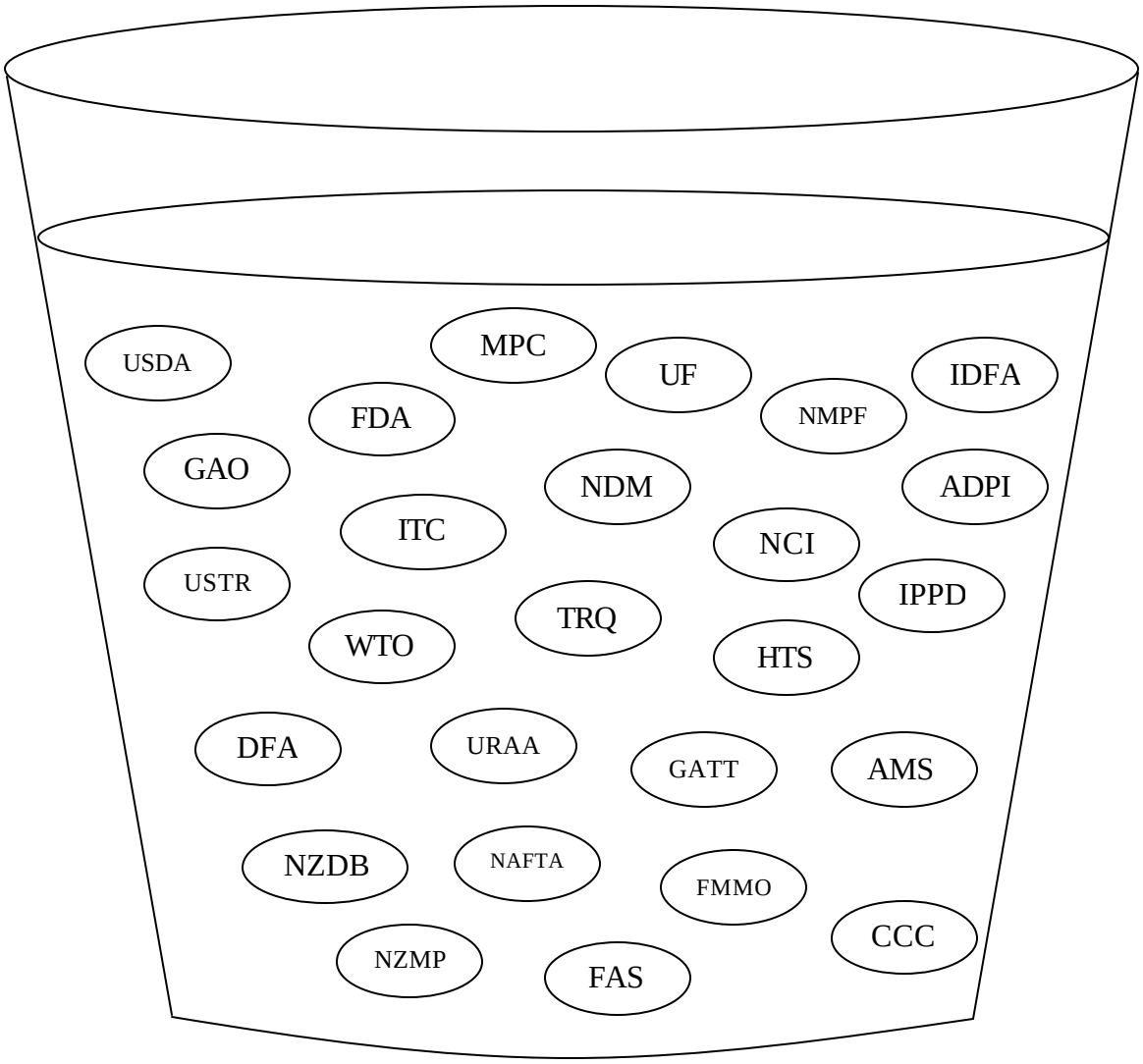
MILK PROTEIN PRODUCTS AND RELATED GOVERNMENT POLICY ISSUES



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INTRODUCTION

There has been considerable debate in recent years concerning issues relevant to milk protein products. Milk protein products include milk protein concentrates (MPCs), wet ultra-filtered (UF) milk protein products,[1] casein, and caseinates.[2] Most of the debate has been concerned with imports of MPCs, which are used in the production of a wide variety of products including cheese, frozen desserts, bakery, and other nutritional products. Some MPCs are manufactured through a process that involves ultra-filtration and spray drying. Others are manufactured by blending various products containing dairy proteins such as nonfat dry milk (NDM) and casein products. Still others are manufactured through a precipitation process similar to that used to produce casein. Until very recently, U.S. production of MPCs and casein has been nearly nonexistent.

Recently, several issues with respect to milk protein products have come to the attention of the United States Department of Agriculture (USDA), Agricultural Marketing Service (AMS), Dairy Programs. Several products using milk protein products as ingredients are in the early stages of development, and their classification under the Federal Milk Marketing Order (FMMO) system is important to both producers and processors. The FMMO system will face further issues as milk fractionation technology develops and becomes more widespread. This paper provides background material to assist USDA, the dairy industry, and other interested parties as dialogue concerning these classification issues develops.

Much of the debate over milk protein products centers on import tariff treatment. In compliance with the Uruguay Round Agreement on Agriculture (URAA), World Trade Organization (WTO) member countries agreed to convert non-tariff trade barriers to bound tariff rates. A tariff is a tax that may be a fixed charge per unit of product imported (specific tariff), a fixed percentage of value (ad valorem tariff), or some combination of both. Bound tariff rates are defined as:

> …tariff rates resulting from GATT negotiations or accessions that are incorporated as part of a country's schedule of concessions. [GATT is the General Agreement on Tariffs and Trade, the predecessor to the WTO.] Bound rates are enforceable under Article II of GATT. If a GATT contracting party raises a tariff above the bound rate, the affected countries have the right to retaliate against an equivalent value of the offending country's exports or receive compensation, usually in the form of reduced tariffs on other products they export to the offending country.
>
> (Economic Research Service, "WTO: Glossaries")

[1] The literature on the subject of milk protein products refers to thick, liquid ultra-filtered milk products as either "wet" or "liquid." Some industry representatives refer to wet ultra-filtered milk protein products as "wet MPCs." Others reserve the term MPC for dry products. MPCs are defined as dry products in this paper.

[2] This is not meant to be a comprehensive list of all milk protein products. There is not agreement as to what products should be part of such a list. For example, Robert Pettit of the Australian Dairy Corporation listed nonfat dry milk as a milk protein product in his presentation to the U.S. Department of Agriculture Outlook Forum 2002.

Some countries, including the United States, established tariff rate quotas (TRQs), allowing limited imports at lower in-quota tariff rates and unlimited imports at higher over-quota tariff rates. Developed countries generally agreed to allow greater import access from 1996 through 2000 by gradually increasing permissible in-quota import quantities and gradually decreasing over-quota tariff rates. Specific commitments are listed in each country's WTO "Schedule of Concessions." Commitments vary for each product. Most dairy products are subject to TRQs. Imports of MPCs, however, are an exception, having a very small import tariff, 0.37 cents per kilogram[3] (0.168 cents per pound), and no TRQ restrictions. U.S. dairy farmers groups argue that this is a loophole allowing milk protein products to be imported, largely displacing NDM and lowering domestic milk prices. They generally support legislation to limit imports of milk protein products. Groups representing manufacturers that use these products argue that these products have unique nutritional and functional qualities that make them highly valuable dairy ingredients for food manufacturing. They also claim that such legislation would violate WTO agreements, possibly invoking retaliation against U.S. exports.

Historically, the Federal government's price support program for NDM has reduced the incentive for domestic production of milk protein products. To the degree that the milk solids from imported products substitute economically for milk solids used in domestic NDM production, they increase government purchases of NDM. To some extent, imported milk protein products substitute for NDM as dairy ingredients. Although other imported milk protein products do not substitute directly for NDM, they may substitute for the domestic production of milk protein products that would exist under different competitive conditions. If greater economic incentives existed for domestic production of milk protein products, some milk solids would probably be reallocated from NDM production to milk protein product production. With a reduction of surplus nonfat milk solids, government purchases of NDM would be reduced.

In contrast to dry milk protein products, wet UF milk protein products have been produced domestically for several years. These products also have a high concentration of milk protein, but they are produced in the form of a thick liquid rather than a dry powder. Since they are a substitute for MPCs in many applications, legislation and rulings concerning wet UF milk protein products are related to the MPC debate. Under current Food and Drug Administration (FDA) standards of identity, UF milk protein products, in either the wet or the dry forms, are not listed *explicitly* as permissible ingredients for standardized cheeses, such as cheddar or mozzarella. The FDA currently is considering a proposed amendment to the cheese standards to indicate explicitly that *wet* UF milk protein products are permissible in the manufacture of standardized cheeses. Although there is no explicit recognition of UF milk protein products in the cheese standards at present, the FDA has not objected to the use wet UF milk protein products in the manufacture of standardized cheeses. However, the FDA has expressly prohibited the use of MPCs in the manufacture of standardized cheeses. The FDA does not specify

[3] Tariffs are listed in dollars-per-kilogram in the Harmonized Tariff Schedule of the United States. One kilogram equals 2.204623 pounds. Throughout this report, tariffs are stated in dollars-per-kilogram with approximate dollars-per-pound followed in parentheses.

ingredients or characteristics of non-standardized cheese products, such as "pizza cheese."

A BRIEF HISTORY OF CASEIN PRODUCTS

Debate concerning imports of milk protein products is not new. In fact, there were attempts to limit imports of commercial casein more than twenty years ago.

Casein is the main protein found in milk. It is separated from pasteurized skim milk either through a precipitation process using an acid or through a coagulation process using rennet. Casein is used in the manufacture of imitation cheese, cheese substitutes, and blended natural/imitation process cheese products. It has several industrial uses, for example, as a glaze in the manufacture of high-quality papers and in paints and cosmetics, and in the production of plastic-like materials such as buttons and knitting needles (Jesse). Casein is not widely used anywhere in the world in the production of natural cheese because it is either insufficiently soluble or does not react with rennet or acid (Wisconsin Center for Dairy Research and Wisconsin Milk Marketing Board).

Casein has been used in the United States at least since the 1940s. In the early days, there were only industrial uses. Dried casein lactate was introduced as a medical dietary supplement in 1953, and by 1960 casein was being applied to dietary preparations. Casein was produced domestically in the 1940s and 1950s. However, the Milk Price Support Program influenced a shift from production of casein to production of NDM. By the mid-sixties, almost all casein supplied to manufacturers in the United States came from foreign sources (Economics and Statistics Service, USDA). U.S. production of casein ended in 1973 (Farm Service Agency, USDA, "How will USDA surpluses of nonfat dry milk help revitalize the domestic casein industry?").

Efforts to restrict imports of casein go back at least as far as 1979. In that year the Agriculture Committee of the U.S. Senate conducted hearings concerning the effect of casein imports on domestic use of nonfat dry milk and the Milk Price Support Program. The U.S. Department of Agriculture (USDA) released studies on the issue in 1981 and 1986. The U.S. International Trade Commission (ITC) released studies on the same issue in 1979 and 1982. None of these efforts resulted in any additional tariffs or other types of import restrictions.

Caseinates are produced by dissolving casein in an alkaline solution of sodium or calcium. In contrast to casein, caseinates are water soluble, making them more functional in certain food applications than casein. Caseinates are often used in the manufacture of non-dairy coffee "creamers" and as emulsifiers in cured meats and in other food applications (Jesse). Caseinates are imported, but also are produced in the U.S. from imported casein. Some of these caseinates are exported. Net imports of caseinates grew substantially through 2001 but declined somewhat in 2002 (See Table 1).

Table 1. U.S. Trade in Caseinates and Casein Derivatives[1]
(Volumes in metric tons.)

Year	Imports	Exports	Net Imports
1989	16,402	660	15,743
1990	16,092	924	15,168
1991	16,779	1,082	15,697
1992	16,718	1,915	14,802
1993	16,946	1,196	15,750
1994	20,846	1,213	19,633
1995	24,585	2,196	22,389
1996	25,481	1,857	23,624
1997	25,961	2,344	23,617
1998	29,929	1,499	28,430
1999	32,512	2,072	30,440
2000	33,887	1,387	32,500
2001	38,234	1,537	36,696
2002	34,699	705	33,994
Avg. (1989-2002)	24,934	1,470	23,463
Jan. thru Aug. 2003	21,636	644	20,992

Source: USDA Foreign Agriculture Service, *U.S. Trade Internet System*

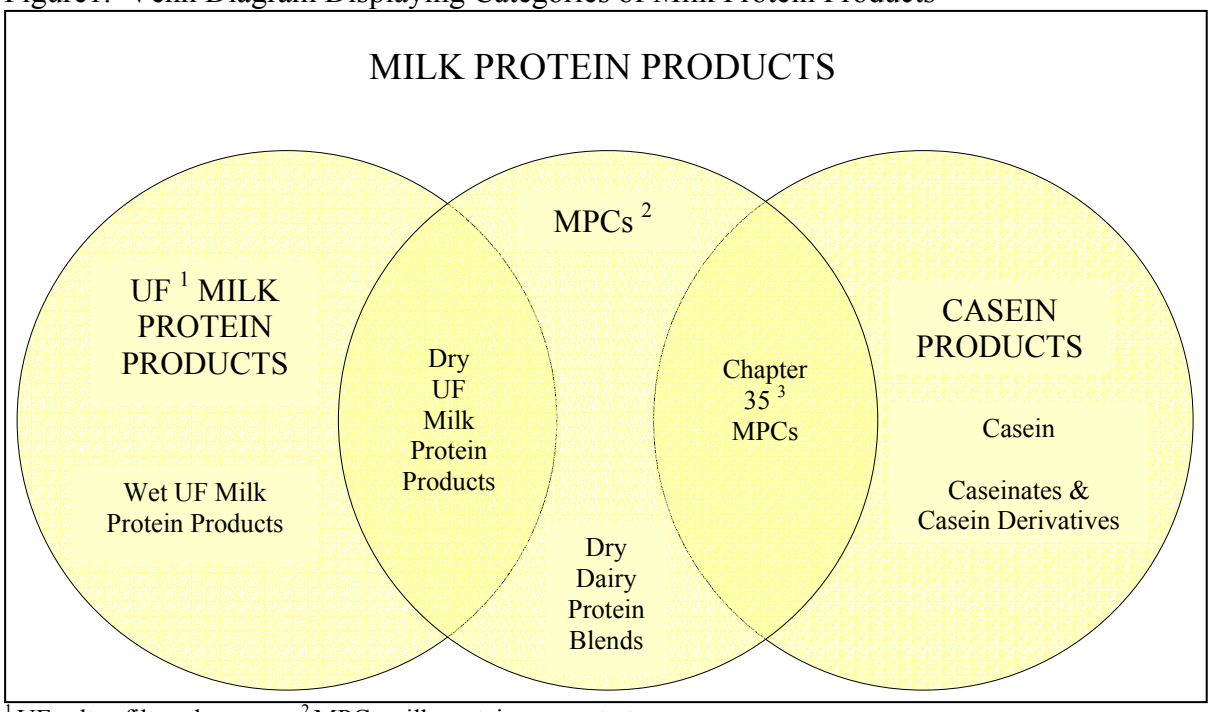
[1] Exported caseinates and casein derivatives are manufactured from imported casein. The numbers in this table exclude casein glues.

THE DIFFICULT PROBLEM OF DEFINING AND CLASSIFYING MILK PROTEIN PRODUCTS

Figure 1 presents a Venn diagram that provides a framework for discussion of milk protein products. Our discussion considers three basic sets of milk protein products: UF milk protein products, MPCs, and casein products. The UF milk protein products set intersects the MPC set because the UF process is used in the manufacture of many MPCs. The MPC set overlaps with the casein products set because some MPCs fall under the casein products heading in Chapter 35 of the Harmonized Tariff Schedule of the United States (HTS).

The following sections discuss definitions and classification issues with respect to milk protein products. Although Figure 1 displays a framework for discussion, advances in technology that allow increasing variations in manufacturing and product constituents, as well as differences of opinion, tend to blur some of the distinctions. Due to import tariff treatments, some classification issues have been sources of contention in the dairy industry.

Figure1. Venn Diagram Displaying Categories of Milk Protein Products



[1] UF=ultra-filtered [2] MPC=milk protein concentrate
[3] Chapter 35 MPCs=MPCs as defined in Chapter 35 of the *Harmonized Tariff Schedule of the United States*

Wet and Dry UF Milk Protein Products

The UF process for milk was developed in the 1970s (U.S. General Accounting Office, *Imports, Domestic Production, and Regulation of Ultra-filtered Milk*, hereafter referred to as the GAO report). The process involves forcing milk through a porous membrane that allows some of the water, lactose, and mineral molecules to pass through. The product that does not pass through the membrane is called the retentate, and the product that passes through the membrane is called the permeate. If whole milk is used, the larger fat and protein molecules are concentrated in the retentate. Often, however, the UF product is manufactured from skim milk. The result is a product with a high protein concentration but very low fat content. When this paper refers to the wet UF milk protein product, it is referring to the retentate. UF milk permeate can be used as a supplement to animal feed, for lactose production, and for land application. An advantage of the UF process is that, by varying the amounts of permeate removed, different concentrations of proteins may be retained. If the retentate is dried through a spray drying process, it becomes a type of MPC. Some dairy industry representatives refer to wet UF milk protein products as "wet MPCs." Wet UF milk protein products are not defined as MPCs in the HTS because they generally contain less than 40 percent protein.

Several characteristics make UF milk protein products, whether wet or dry, attractive to dairy manufacturers. They can be tailored to meet the needs of dairy manufacturers—including producers of cheese products, frozen desserts, bakery, and other nutritional products. With wet UF milk protein products about two-thirds of the water is usually

removed from the milk, thereby substantially reducing costs of transporting the milk solids. Drying the products to produce MPCs further reduces the transportation costs. The transportation benefit is applicable only for long distances because of capital and operating costs associated with UF equipment. UF milk protein products are regarded as valuable for making cheese products because of their high protein and low lactose content (GAO report).

The GAO report states that in the 48 contiguous states there were 22 dairy manufacturing plants, mostly cheese plants, with UF equipment for milk. Of that number, at least five of these plants transported some UF milk protein products to other plants. The number of plants may have grown since publication of the GAO report in March 2001. However, statistics concerning plants with UF equipment are not readily available.

The Distinction between Chapter 4 "Milk Protein Concentrates" and "Milk…In Powder, Granules, or Other Solid Form"

With respect to the debate concerning milk protein products, dairy producer groups have had the strongest objections to imports of MPCs that are produced through blending of various milk products. They claim, for example, that NDM can be easily mixed with dry milk protein ingredients to circumvent TRQs. On September 18, 2002, Customs entered a petition from National Milk Producers Federation (NMPF) into the Federal Register. In the petition, NMPF contends that Customs, in two previous rulings, had misclassified certain imported dairy protein blends as MPCs (HTS code 0404.90.10) and that these protein dairy blends should be classified as "milk…in powder, granules, or other solid form" (HTS code 0402.10, 0402.21, or 0402.29, depending on fat content). While the two challenged rulings state the composition of the products, they do not mention the method of manufacture. Supporting documents relevant to the rulings were lost in the destruction of the New York Customs House at the World Trade Center on September 11, 2001. The product of one of the challenged rulings contained "lactose (42.2 percent, +/-0.5 percent), protein (41.5 percent, +/-0.5 percent), ash (8.2 percent, +/- 0.5 percent), moisture (4.1 percent, +/- 0.3 percent), and fat (2.5 percent, +/- 0.5 percent)." The other product contained "41 percent protein, 29 percent fat, 7 percent minerals, and 6 percent moisture." According to the Federal Register notice, NMPF asserts that:

- The products in question are not "complete milk proteins" for two reasons:
    - They do not contain "both casein and lactalbumin in the same, or very nearly the same proportion, relative to each other, as they are naturally found in skim milk."
    - They do not retain the functional properties of proteins as they occur in skim milk.

- The term "concentrate" requires that the product has been concentrated by reduction "in volume or bulk by the removal of liquids and other ingredients." According to NMPF, the products in question cannot be said to have been manufactured through a process of concentration.

- Ultra-filtration is the only process that fits the standards for "complete milk protein" and "concentrate." The legislative history and prior Customs rulings indicate that the tariff provision was provided to cover only products manufactured through this process.

(Bonner)

On April 1, 2003, after reviewing numerous comments submitted by interested parties, Customs denied NMPF's request to have the products reclassified for the following reasons:

- The explanatory notes for classification 0404 provide for "products consisting of milk constituents, which do not have the same composition as the natural product." Customs rejected NMPFs argument that the heading was intended for products that have the same constituents as those naturally occurring in milk.

- Customs did not find that MPCs are restricted to any method of manufacture. The classification applies to "any" complete milk protein product which contains at least 40 percent protein.

- If Congress had intended the MPC definition to include only products manufactured through a UF process, as asserted by NMPF, it could have drafted the provision accordingly.

- The GAO report makes it clear that the term "milk protein concentrate" can apply to a broader class of products than those produced through ultrafiltration.

(Harmon)

NMPF filed an appeal shortly after the Customs ruling. There will be two phases in the appeals process: an information-gathering phase from Customs and a litigation phase. According to NMPF, the first phase alone will take at least a year to complete (NMPF, "NMPF to Appeal U.S. Customs Service Ruling on Milk Protein Concentrate Imports").

Chapter 4 MPCs, Chapter 35 MPCs, and Casein

The HTS has two classifications of MPCs, each with its own HTS code: Chapter 4 MPCs, HTS Code 0404.90.10 and Chapter 35 MPCs, HTS Code 3501.10.10.[4] The distinction between the two classifications is somewhat ambiguous. A reading of the HTS is not helpful in distinguishing the differences between the codes. Chapter 4 MPCs are classified under the same chapter as most dairy products. Additional Note 13 of the

[4] Chapter 4 of the HTS includes "dairy produce; bird's eggs; natural honey; edible products of animal origin, not elsewhere specified or included." Chapter 35 of the HTS includes "albuminoidal substances; modified starches; glues; enzymes."

chapter states, "For purposes of subheading 0404.90.10, the term 'milk protein concentrate' means any complete milk protein (casein plus lactalbumin) concentrate that is 40 percent or more protein by weight." This definition was first established by the *Tariff and Trade Act of 1984***,** the law that first specifically provided import tariffs for MPCs. Chapter 35 MPCs are classified in the same chapter as casein and caseinates. The Chapter 35 MPC definition is identical to that of Chapter 4 except that no percentage of protein is stated. Customs made the following June 3, 1998, statement to clarify the distinction between the two classifications:

> Customs' position is that only milk protein concentrates containing approximately 90 percent casein, obtained from the precipitation process…, plus lactalbumin should be classified under 3501.10.10 under a heading for casein. Accordingly, milk protein concentrates containing from 40 percent to 90 percent protein (casein plus lactalbumin) should be classified in subheading 0404.90.10.
>
> (Customs, *National Import Specialist Bulletin Board*)

In a January 1992 ruling, Customs responded to a letter concerning MPCs produced through a chromatographic process.[5] Customs ruled that the product falls under Chapter 4 rather than Chapter 35, stating: "The skimmed milk, from which the product is derived, does not undergo precipitation or curdling whereby casein is obtained (as described in 3501), but rather undergoes chromatography whereby lactose is removed."

There is an interesting contrast between these Customs rulings and the ruling on NMPF's petition to have milk protein blends under Chapter 4 reclassified. The ruling on NMPF's petition *does not* make a distinction as to method of manufacture, but the rulings concerning differences in Chapter 4 and Chapter 35 MPCs *do* make a distinction with respect to method of manufacture. (See the previous discussion "The Distinction between Chapter 4 'Milk Protein Concentrates' and 'Milk…In Powder, Granules, or Other Solid Form.'")

A question arises as to the difference between Chapter 35 MPCs and plain acid or rennet casein. While Chapter 35 MPCs have a tariff of 0.37 cents per kilogram (0.168 cents per pound), edible casein products not classified as MPC are imported with no tariff. From the Customs definition of Chapter 35 MPCs, the distinction between Chapter 35 MPCs and plain casein appears to be the presence of lactalbumin, or whey protein. Some caseins contain as little as 85 percent protein (Chandan). It is unclear as to whether MPCs that are similar to casein products with protein percentages only in the mid-80s would be considered "approximately 90 percent," thus falling under Chapter 35, or considered less than approximately 90 percent, thus falling under Chapter 4.

In a memo released shortly after the 1998 Customs listing, ADPI states, "We believe this action will, at least in the short run, clear up the confusion that has existed regarding the

[5]A chromatographic process is one "in which a chemical mixture carried by a liquid or gas is separated into components as a result of differential distribution of the solutes as they flow around or over a stationary liquid or solid phase" (Merriam-Webster Dictionary).

classification of MPC and result in virtually all of such product being classified under Chapter 4." It seems likely that significant misclassification issues still exist. It is certainly not true that "virtually all" MPCs are classified under Chapter 4.

Misclassifications between the two categories can cause problems in understanding changes in MPC imports over time. For example, the GAO report considers only Chapter 4 MPCs rather than both classifications. This is understandable because the report is concerned with UF milk products; MPCs manufactured through the UF process should only be classified under Chapter 4. The report states that imports of MPCs increased 56-fold from 1990 to 1999. However, when both classifications are considered together, there is actually only about a 15-fold increase in MPC imports from 1990 to 1999. The report also states that imports of MPCs nearly doubled between 1998 and 1999. When both classifications are considered together, MPC imports actually increased only 37 percent from 1998 to 1999.

THE RISE IN IMPORTS OF MILK PROTEIN PRODUCTS AND GOVERNMENT REMOVALS OF NDM

In 2000, import quantities of MPCs, casein, and caseinates reached a peak volume of 173 thousand metric tons. From 1989 to 2000, imports of these products more than doubled. Chapter 4 and Chapter 35 MPCs, in aggregate, had the most significant increase, more than 16-fold from 4 thousand metric tons in 1989 to 65 thousand metric tons in 2000. Imports of milk protein products were significantly lower in 2001 and 2002, but they again increased in the first eight months of 2003 (See Table 2).

It is somewhat difficult to estimate the milk protein imported from the selected milk protein products.[6] For Chapter 4 MPCs, the protein content ranges from 40 percent to 90 percent. Chapter 35 MPCs supposedly have a protein content of approximately 90 percent. However, there is doubt about this percentage given probable misclassifications between Chapter 4 and Chapter 35 MPCs. Nevertheless, the 90 percent protein estimate for Chapter 35 MPCs is the best available. Although better estimates are available for the protein content of casein and caseinates, sources vary concerning the protein contents of these products as well. Given these uncertainties, the protein contents of imported selected milk protein products are calculated as ranges rather than point estimates. In 1989, the protein content of the selected imported products in aggregate is estimated to have been between 73 thousand to 81 thousand metric tons. The protein content rose to some point between 125 and 160 thousand metric tons in 2000.

[6] Since there is even less information available to estimate other milk components (i.e. butterfat, lactose, and ash) imported with the selected milk protein products, there is no attempt to make such estimation in this paper.

Table 2. Imports for Consumption of Selected Milk Protein Products Since 1989 (Volumes in metric tons)

Year	Chapter 4 MPC[1]			Chapter 35 MPC		Casein			Caseinate and Other Casein Derivatives[3]			Total of Selected Milk Protein Products		
	HTS[2] 0404.90.10			HTS 3501.10.10		HTS 3501.10.50			HTS 3501.90.60[4]					
	Product volume	Estimated protein		Product volume	Estimated protein	Product volume	Estimated protein		Product volume	Estimated protein		Product volume	Estimated protein	
		Low, 40%	High, 90%		Approx. 90%[5]		Low, 85%	High, 95%		Low, 89%	High, 91%		Low	High
1989	1,511	604	1,359	2,439	2,195	65,392	55,583	62,122	16,402	14,598	14,926	85,744	72,980	80,603
1990	805	322	724	2,863	2,577	69,027	58,673	65,576	16,092	14,322	14,643	88,787	75,894	83,521
1991	1,122	449	1,010	3,702	3,332	68,797	58,477	65,357	16,779	14,933	15,269	90,399	77,191	84,967
1992	3,933	1,573	3,540	3,508	3,157	74,622	63,429	70,891	16,718	14,879	15,213	98,781	83,038	92,801
1993	5,820	2,328	5,238	3,396	3,056	60,466	51,396	57,443	16,946	15,082	15,420	86,627	71,862	81,157
1994	12,009	4,804	10,808	6,787	6,108	68,339	58,088	64,922	20,846	18,553	18,970	107,981	87,553	100,808
1995	7,287	2,915	6,558	3,010	2,709	65,806	55,935	62,516	24,585	21,881	22,373	100,688	83,440	94,155
1996	14,256	5,702	12,831	3,867	3,481	69,166	58,791	65,708	25,481	22,678	23,188	112,771	90,652	105,207
1997	16,998	6,799	15,298	11,394	10,254	65,025	55,272	61,774	25,961	23,105	23,624	119,378	95,430	110,951
1998	28,929	11,571	26,036	10,919	9,827	70,394	59,835	66,875	29,929	26,637	27,235	140,171	107,871	129,973
1999	44,877	17,951	40,389	9,707	8,736	66,162	56,238	62,854	32,512	28,935	29,585	153,257	111,860	141,565
2000	52,928	21,171	47,635	11,921	10,729	74,170	63,045	70,462	33,887	30,159	30,837	172,906	125,104	159,663
2001	28,469	11,387	25,622	6,934	6,241	61,617	52,374	58,536	38,234	34,028	34,793	135,253	104,030	125,191
2002	33,626	13,450	30,263	7,815	7,034	57,519	48,891	54,643	34,699	30,882	31,576	133,659	100,257	123,516
Avg. (1989-2002)	18,040	7,216	16,236	6,305	5,674	66,893	56,859	63,548	24,934	22,191	22,689	116,172	91,940	108,148
2003 through August	26,208	10,483	23,588	6,866	6,180	45,540	38,709	43,263	21,635	19,255	19,688	100,250	74,627	92,718

Sources: USDA Foreign Agriculture Service, *U.S. Trade Internet System* ; *Harmonized Tariff Schedule of the United States* ;
Chandan, *Dairy Based Ingredients* , 1997, Egan Press;
Wisconsin Center for Dariy Research and the Wisconsin Milk Marketing Board, *Dairy Proteins* , 2002.

[1] MPC=Milk protein concentrate

[2] HTS=*Harmonized Tariff Schedule of the United States*

[3] Casein glues are not included.

[4] Caseinates are classified under HTS 3501.90.50 prior to 1995.

[5] The protein content of Chapter 35 MPCs is possibly over estimated in this table. See the section of this paper entitled "Chapter 4 MPCs, Chapter 35 MPCs, and Casein."

Table 3 provides a comparison of U.S. milk protein production to the protein content of the selected milk protein products and government removals of NDM.[7] The protein contained in the selected milk protein products was between 3.7 to 4.1 percent of U.S. milk protein production in 1989. The percentage grew to between 5.4 to 6.9 percent in 2000. The percentage range decreased somewhat, to between 4.3 and 5.5 percent in 2001 and 2002. For January through August of 2003, the percentage increased to between 4.7 to 5.9 percent. Government removals of NDM increased from zero in 1989 to 374 thousand metric tons in 2002 with a protein content of about 125 thousand metric tons. This represents about 5.4 percent of U.S. milk protein produced that year. In January through August 2003, government purchases of NDM continued at an even higher rate, accounting for 5.8 percent of U.S. milk protein produced. While protein imported in the form of the selected milk protein products has increased significantly over the years, government protein removals in the form of NDM have grown at even a faster rate, surpassing protein imports from the selected products in 2002.

Table 4 provides data for U.S. imports of milk proteins by country from 1995 through 2002. Most imports of milk protein products have come from the European Union (44.9 percent) and New Zealand (37.0 percent). Australia is a distant third (5.6 percent). New Zealand supplies the greatest volume of MPC imports (41.7 percent). The European Union is the greatest supplier of casein products (casein, 44.2 percent; caseinates and casein derivatives, 54.1 percent). While India is not a significant supplier of MPCs, caseinates, or casein derivatives, imports of casein from India have been significant (4.9 percent).

THE USE OF ULTRA-FILTERED MILK PRODUCTS IN CHEESE

The Basic Issue

UF milk, in either the dry MPC form or the wet form, can be used in the production of cheese products. The FDA maintains standards of identity for many types of cheeses. Under current FDA standards of identity, UF milk is not *explicitly* listed as an allowable ingredient in standard cheeses such as cheddar, mozzarella, or pasteurized process cheese. There are no restrictions in the use of ultra-filtered milk for non-standard cheese products such as "pizza cheese." Although UF milk is not explicitly defined as an allowable ingredient in standardized cheeses, cheese manufacturers have used wet UF milk for some standardized cheeses, claiming allowance for this through "alternate make" procedure provisions. Such provisions state that the particular standardized cheese can be manufactured "by any other procedure which produces a finished cheese having the same physical and chemical properties." Appendix A provides the standard of identity for cheddar cheese as an example. There has been some question as to whether the use of UF milk in cheese making should be viewed as a process or an ingredient. There is general agreement that if raw milk is brought into a cheese plant, ultra-filtered through a membrane, and then used for the manufacture of cheese, the UF milk protein product is not an ingredient but a part of the cheese-making process. However, if the ultra-filtered milk product is produced off-

[7] Government removals of NDM include government purchases of NDM under the Milk Price Support Program and bonuses under the Dairy Export Incentive Program.

Table 3. U.S. Milk Protein Production Compared to Imports of Selected Milk Protein Products and Government Removals of NDM
(Volumes in metric tons)

Year	U.S. Milk Production		MPC[1]; Casein; Caseinate and Casein Derivative[2] Imports					Government Removals of NDM[3]		
	Volume	Estimated true protein 3.03 %[4]	Volume	Estimated protein from Table 2		Estimated percentage of U.S. milk protein production		Volume	Estimated true protein 33.4%	Estimated percentage of U.S. Milk protein production
				Low	High	Low	High			
1989	65,268,756	1,977,643	85,744	72,980	80,603	3.7	4.1	0	0	0.0
1990	67,005,107	2,030,255	88,787	75,894	83,521	3.7	4.1	53,432	17,846	0.9
1991	66,994,221	2,029,925	90,399	77,191	84,967	3.8	4.2	122,263	40,836	2.0
1992	68,423,037	2,073,218	98,781	83,038	92,801	4.0	4.5	62,015	20,713	1.0
1993	68,327,329	2,070,318	86,627	71,862	81,157	3.5	3.9	138,048	46,108	2.2
1994	69,672,683	2,111,082	107,981	87,553	100,808	4.1	4.8	131,558	43,940	2.1
1995	70,439,254	2,134,309	100,688	83,440	94,155	3.9	4.4	155,940	52,084	2.4
1996	69,855,935	2,116,635	112,771	90,652	105,207	4.3	5.0	25,963	8,672	0.4
1997	70,801,674	2,145,291	119,378	95,430	110,951	4.4	5.2	135,167	45,146	2.1
1998	71,414,024	2,163,845	140,171	107,871	129,973	5.0	6.0	148,050	49,449	2.3
1999	73,804,455	2,236,275	153,257	111,860	141,565	5.0	6.3	245,202	81,898	3.7
2000	76,048,377	2,304,266	172,906	125,104	159,663	5.4	6.9	314,145	104,924	4.6
2001	74,995,135	2,272,353	135,253	104,030	125,191	4.6	5.5	224,263	74,904	3.3
2002	77,000,920	2,333,128	133,659	100,257	123,516	4.3	5.3	373,896	124,881	5.4
Avg. (1989-2002)	70,717,922	2,142,753	116,172	91,940	108,148	4.3	5.0	152,139	50,814	2.4
2003 through August	52,135,444	1,579,704	100,250	74,627	92,718	4.7	5.9	272,201	90,915	5.8

Sources: USDA Foreign Agriculture Service, *U.S. Trade Internet System* ;
USDA, National Agricultural Statistics Service, *Milk Production* (various issues), *Milk Cows and Production Final Estimates* (1993-1997), *Milk Cows and Production Final Estimates* (1987-1993);
USDA, Economic Research Service, *Dairy Briefing Room, Most Frequently Requested Tables* , *Livestock, Dairy, and Poultry Outlook* (December 2003)
Harmonized Tariff Schedule of the United States

[1] MPC=Milk protein concentrate

[2] Excludes casein glues.

[3] Government removals of NDM include government purchases of NDM under the Milk Price Support Program and bonuses under the Dairy Export Incentive Program.

[4] A true protein measure excludes nonprotein nitrogen (NPN), which has little nutritional value. NPN is included in the estimation of total or crude protein. Raw milk contains about 3.03 percent true protein, and nonfat dry milk contains about 33.4 percent true protein (Dairy Programs). Estimates assume that milk protein reported for imports is true protein. This treatment is consistent with that of the GAO report. On a crude protein basis, protein percentages are about 3.4 percent for raw milk and 35.5 percent for nonfat dry milk (Chandan).

Table 4. Milk Protein Products: Imports by Country, 1995-2002 (Volumes in thousands of metric tons.)

Country	MPCs-Chapter 4 & Chapter 35[1]		Casein		Caseinates and Casein Derivatives		Total: MPCs, Casein, and Caseinates	
	Volume	Percent	Volume	Percent	Volume	Percent	Volume	Percent
European Union	113.0	38.6	234.0	44.2	132.8	54.1	479.8	44.9
New Zealand	122.0	41.7	170.5	32.2	102.6	41.8	395.1	37.0
Australia	23.4	8.0	34.5	6.5	1.7	0.7	59.5	5.6
India	0.4	0.1	26.1	4.9	0.1	0.0	26.6	2.5
Rest of World	34.1	11.7	64.7	12.2	8.2	3.3	107.0	10.0
Total	292.9	100.0	529.9	100.0	245.3	100.0	1,068.1	100.0

Source: Foreign Agriculture Service, *U.S. Trade Internet System*

[1] MPC=milk protein concentrate.

Chapter 4 and Chapter 35 refer to headings in the *Harmonized Tariff Schedule of the United States.*

site and then shipped to the cheese plant, there is debate as to whether the UF milk protein product should be considered an ingredient or part of the manufacturing process.

Actions Leading to Proposed Amendment to Cheese Standards

T.C. Jacoby and Company, Inc. (Jacoby and Company), is a St. Louis broker of dairy products. On October 2, 1996, FDA responded to a letter from Jacoby and Company concerning the labeling of UF milk protein products produced by an on-farm UF milk plant and cheese products made from the UF milk. The UF milk protein product was to be shipped from an on-farm UF milk plant in New Mexico to Bongards Creamery, Bongards, Minnesota, to be manufactured into cheddar cheese. With respect to the UF milk protein product itself, FDA had no objections to the name "milk" being used as *part* of the name given to the product, but "the retentate must be labeled so that the purchaser can readily determine how the retentate differs from milk." FDA stated that the cheese product could permissibly be labeled as cheddar cheese "provided that the Cheddar cheese manufactured from this retentate is at least nutritionally equivalent to and has the same physical and chemical properties, as the cheese prepared by the procedures specifically set forth in the applicable standard" (Cole, copy of letter provided by National Cheese Institute, Attachment E).

In the following years, use of ultra-filtered milk for cheese manufacturing grew. Jacoby and Company, through a joint venture with Select Milk Producers, Inc., expanded production to include several on-farm UF milk plants with sales to various cheese plants in several states (GAO). There was ambiguity as to whether or not other cheese plants were permitted to use ultra-filtered milk products shipped from distant locations to produce standardized cheeses. USDA, Agricultural Marketing Service, Dairy Programs (Dairy Programs), had the understanding that FDA's 1996 approval, applicable to the Bongards Creamery, was temporary and limited to only one location (Schonrock, *Letter to Mr. John B. Foret,* March 1, 1999). From 1997 through 1999, there was considerable dialogue among FDA, USDA, the International Dairy Foods Association (IDFA), and dairy industry executives concerning the issue. Dairy Programs objected to the argument of some industry representatives that the use of UF milk protein products is permitted under alternative make provisions of some standardized cheeses.

This interpretation could "set a precedent that could be interpreted to allow the use of other non-identified ingredients under the same rationale" (McKee).

For a short period in 1999, USDA listed at least one cheese plant receiving UF milk protein product from a distant location as ineligible for the USDA Dairy Plant Survey Program.[8] After meeting with IDFA and company representatives, USDA reinstated the plant with the understanding that IDFA would work diligently with the FDA to resolve the issue. On October 2, 1999, FDA sent a letter to USDA stating that the use of UF milk in standardized cheeses "cannot be accommodated outside of rulemaking." However, FDA stated that it would not object to "experimental use of UF milk when limited to the manufacture of standardized mozzarella and cheddar cheeses…" as long as the agency received a citizen's petition requesting an amendment to cheese standards within six months (Foret, *Letter to Mr. F. Tracy Schonrock*, Oct. 2, 1999). In a November 8, 1999, reply, USDA informed FDA that, "While these [mozzarella and cheddar] are the predominant cheeses in which this [UF milk] product is used, we are also aware that it is commonly used in a wide variety of other standardized cheeses" (Schonrock, *Letter to Mr. John B. Foret*, November 8, 1999).

In a citizen's petition dated December 2, 1999, the American Dairy Products Institute (ADPI) requested that the definition of milk with respect to the manufacture of standard cheeses be amended to state, "Milk may be subjected to an ultrafiltration process that results in a fluid ultrafiltered (UF) milk for use in the manufacture of cheese." The following grounds were stated:

> Fluid UF milk is derived by the partial removal of water and lactose from fresh fluid milk. It is a technological advancement of the traditional clarification and concentration processes that already are permitted under the existing cheese standards. The permitted use of fluid UF milk in the manufacture of cheese would assist in the more efficient movement of milk from areas of the country with an excess of fluid milk to those areas with an insufficient supply. These increased efficiencies will result in benefits to consumers without alteration of cheese composition, characteristics, or flavor that they have come to expect in the cheeses governed by the standards.
>
> (ADPI, *Citizen Petition Requesting Amendment to Definition of "Milk" In 21 C.F.R. Part 133.3*)

The National Cheese Institute, an affiliate of IDFA, joined by the Grocery Manufacturers of America, Inc., and the National Food Processors Association (NCI et al.), followed with a more detailed petition dated February 10, 2000. In contrast to the ADPI petition, which proposed recognition of "fluid UF milk in the manufacture of cheese," NCI et al. specified recognition of ultra-filtered milk "…in reconstituted, concentrated, liquid, and dry forms in standardized cheese products like other forms of milk…." The petition states the petitioners' belief that the alternate make procedure provisions provide legal basis for the use of ultra-filtered milk in the

[8] The Dairy Plant Survey Service is a voluntary inspection service available to the dairy and related food industry. In order to participate, a plant's management agrees to allow periodic, unannounced inspections of their processing facilities and equipment by a licensed U.S. Department of Agriculture survey inspector. Before a dairy plant can participate in any other inspection and grading services, the plant must successfully meet the minimum requirements of a plant survey.

manufacture of standardized cheeses. However, two main reasons were given for seeking explicit recognition of ultra-filtered milk in the standards:

> First, by explicitly recognizing filtered milk products as "milk" and "nonfat milk" for purposes of cheese manufacturing, the proposed amendments would allow cheese manufacturers to expand the use of filtration technologies and the resulting filtered milk in cheese manufacturing. The use of filtered milk would be permitted in standardized cheeses which are governed by standards of identity that, for historical reasons, do not include alternate make procedure provisions, to the extent feasible under the traditional make procedures specified in the existing standards. This would allow greater use of filtered milk to help manage seasonal imbalances in milk supplies and demand for cheese, including for smaller cheese manufacturers, which do not always have direct or consistent access to milk filtration facilities. This would expand the range of cheese manufacturers able to achieve the production efficiencies offered by filtered milk and the resulting cost savings that ultimately could be passed on to consumers.
>
> Second, the proposed amendments would assist the USDA Office of Dairy Programs in administering plant inspection requirements associated with its voluntary cheese grading service by specifying that filtered milk products are encompassed within the meanings of "milk" and "nonfat milk" as used in Part 133 and may be used in the manufacture of standardized cheese. The proposed amendments also would help USDA inspectors distinguish filtered milk products used as ingredients in standardized cheeses from other milk isolates (such as chemically derived caseinates) that are produced through other separation processes which never have been encompassed by the alternate make procedure provisions for standardized cheeses.
>
> (National Cheese Institute et al.)

NCI et al. provided a list of 46 cheeses that have alternate make provisions and 25 that do not have them (See Appendix B). Some of the cheeses that do not have alternate make provisions are manufactured from cheeses that do have such provisions.

In a February 23, 2000, news release, NMPF and six other farm groups expressed opposition to the NCI et al. petition because it would allow for use of dry milk proteins in cheese production. In response to opposition from producer groups, NCI et al. amended its petition in June 2000 to exclude the use of dry ultra-filtered milk products in the production of standardized cheeses. On September 6, 2001, NMPF sent a letter to FDA in support of ADPI's petition. Thus, at this point, both manufacturing and some producer groups were in support of the proposed amendment. On October 19, 2001, NMPF sent a letter to FDA clarifying the NMPF's position as to the definition of "liquid UF milk":

> While NMPF fully endorses the ADPI petition to allow only liquid UF milk to be used in cheese making, we believe it is essential that a definition of "liquid" be established as a reference point. NMPF requests that a limitation of 45% total solids be included in any change that will allow for liquid UF milk to be used for cheese making….A product with greater than 45% total solids has more than likely undergone a subsequent treatment for concentration beyond ultrafiltration.
>
> (Kozak, *Letter to Dr. Christine Lewis*, October 19, 2001)

MPCs Used in Violation of Cheese Standards

In its 2001 report, the GAO found no evidence of widespread illegal use of UF milk in the manufacture of standardized cheeses. It noted, however, that the FDA conducts few inspections to check for compliance with cheese standards. Some states conduct their own inspections for compliance with FDA cheese standards. For example, in 2000, Vermont inspectors found two cheese plants using MPC in violation of FDA product identity standards (GAO).

On May 7, 2002, in response to a letter from the Wisconsin Department of Agriculture, Trade and Consumer Protection, the FDA clarified its position that MPCs are not allowed in standardized cheeses but that the FDA has not objected to the use of wet ultra-filtered milk in specific circumstances. Due to issues such as bioterrorism and food safety, enforcement of the restriction against use of MPCs in standardized cheeses had not been a priority, but plans were being made for inspections of cheese plants to determine compliance (Foret, May 2, 2002). On December 18, 2002, the FDA sent a warning letter to Kraft Foods North America, Inc. (Kraft), after inspections of facilities in Champaign, Illinois; New Ulm, Minnesota; and Springfield, Missouri. Kraft was found to have branded several of its products containing MPCs as "pasteurized process cheese food" in violation of FDA standards of identity (Connelly). Kraft responded by changing the names of these products to "pasteurized prepared cheese product."

Recent Actions

On January 7, 2003, a Senate bill, S-40, was introduced to prohibit the FDA from changing the definition of "milk" or "nonfat milk" to include dry ultra-filtered milk or casein. The legislation would prohibit any product containing dry ultra-filtered milk or casein from being labeled as cheese. The bill is sponsored by Senator Russell D. Feingold (Wisconsin) with Senators James M. Jeffords (Vermont) and Patrick J. Leahy (Vermont) as co-sponsors. The bill asserts that the use of dry UF milk products in standardized cheeses would increase costs of the dairy price support program, lower revenues for dairy farmers, lower sanitary standards, and mislead consumers. The bill has been referred to the Committee on Agriculture, Nutrition, and Forestry.

On March 10, 2003, the FDA added a plan to "develop proposed rule to amend definition for 'milk' in cheese standards to provide for use of wet ultra-filtered milk" to its "A" priority list for 2003.[9] Although NMPF has been in support of the proposed amendment since September 2001, some opposition remains. Most of the debate concerns whether or not the quality of the product is diminished through the use of ultra-filtered milk. While supporters of the proposed amendment insist that cheese made with ultra-filtered milk "produces a finished cheese having the same physical and chemical properties as cheese made with unfiltered milk," the National Farmers Union disagrees. The organization contends that the amendment would lower cheese standards and work to the detriment of the investment that dairy farmers have made in promoting milk and dairy products (Contente).

[9] FDA's 2003 priority listing was to "develop" a proposed rule. Some in the industry were expecting FDA to publish a proposed rule by the end of FDA's fiscal year, September 30, 2003. However, FDA makes a distinction between *developing* a proposed rule and *publishing* a proposed rule in its priorities. (Satchell)

IMPORTS OF WET UF MILK PRODUCTS

There is very limited information available about imports of wet UF milk protein products. It is not a simple matter to determine how they would be classified in the HTS. UF milk products are not specifically listed. A December 5, 2001, Customs ruling, H85634, concerns a wet UF milk product to be imported from Canada. The product is made from the retentate of the UF milk process with added lactose. The UF milk and lactose are of Canadian origin. After processing, the product contains 12 percent lactose, 9 percent protein, 6-8 percent milk fat, and 1 percent minerals. It is designed to be used in cappuccino or latte beverages. In the ruling, Customs states that the product is to be imported using HTS Code 0404.90.3000 if in quota, or 0404.90.5000 if over quota. These codes are provided for "…products consisting of natural milk constituents, whether or not containing added sugar or other sweetening matter, not elsewhere specified or included…described in additional U.S. note 1 to chapter 4."[10] The HTS additional U.S. note 1 to chapter 4 covers a wide range of dairy products, but most are specified or included under other HTS codes. In-quota imports under HTS code 0404.90.3000 have a general tariff rate of 14.5 percent ad valorem. However, if the product is wholly obtained or produced entirely in the territory of Canada, under the North American Free Trade Agreement (NAFTA) it has an in-quota tariff rate of zero. Since 2000, over-quota imports under HTS code 0404.90.5000, including those from Canada, have had a tariff of $1.189 per kilogram (53.93 cents per pound) plus 8.5 percent ad valorem.

Table 5 provides a hint concerning imports of wet UF milk products. It is interesting that the beginning of significant imports from Canada coincides roughly with the ruling. However, no information is available to determine how much UF milk is being imported under these HTS codes. Perhaps other miscellaneous products are being imported using these codes. Given varying product constituents, manufacturing processes, and importers' knowledge of tariff rules, it is possible that importers have been using different HTS codes for UF milk products.

It may seem curious that most of the imports for this classification are over-quota imports. For TRQ purposes, this classification is included in a rapidly growing, broad category of miscellaneous products that includes 23 in-quota HTS classifications (HTS, Chapter 4,

[10] The HTS states:

> For the purposes of this schedule, the term 'dairy products described in additional U.S. note 1 to chapter 4' means any of the following goods: malted milk, and articles of milk or cream (except (a) white chocolate and (b) inedible dried milk powders certified to be used for calibrating infrared milk analyzers); articles containing over 5.5 percent by weight of butterfat which are suitable for use as ingredients in the commercial production of edible articles (except articles within the scope of other import quotas provided for in additional U.S. notes 2 and 3 to chapter 18); or, dried milk, whey or buttermilk (of the type provided for in subheadings 0402.10, 0402.21, 0403.90 or 0404.10) which contains not over 5.5 percent by weight of butterfat and which is mixed with other ingredients, including but not limited to sugar, if such mixtures contain over 16 percent milk solids by weight, are capable of being further processed or mixed with similar or other ingredients and are not prepared for marketing to the ultimate consumer in the identical form and package in which imported.
>
> *Harmonized Tariff Schedule of the United States*

Table 5. Imports of "…products consisting of natural milk constituents, whether or not containing added sugar or other sweetening matter, not elsewhere specified or included…described in additional U.S. note 1 to chapter 4." (Volumes in metric tons.)

	1998	1999	2000	2001	2002	2003 (Jan.-Aug.)
In-quota Imports[1]						
HTS Code 0404.90.3000						
Canada	0	0	0	0	33.6	0
Over-Quota Imports[2]						
HTS Code 0404.90.5000						
Belgium-Luxembourg	0	0	16.7	0	0	0
Canada	0	0	0	6.7	82	89.8
Total In-Quota and Over-Quota	0	0	16.7	6.7	115.6	89.8

Sources: USDA Foreign Agriculture Service, *U.S. Trade Internet System*; *Harmonized Tariff Schedule of the United States*.

[1] The tariff for in-quota imports has been 14.5 percent ad valorem throughout the time period of this table. However, in-quota imports wholly obtained or produced entirely within the territory of Canada have no tariff.

[2] The tariffs for over-quota imports have been: $1.259/kg. + 9.0% ad valorem in 1998
$1.224/kg. + 8.8% ad valorem in 1999
$1.189/kg. + 8.5% ad valorem since 2000
These over-quota tariff rates apply to most countries, including Canada.

Additional Note 10). For this particular TRQ, the quota is applied on a first come, first served basis. Evidently, imports of products from other tariff classifications filled the quota first in 2000, 2001, and 2003, allowing no room for in-quota imports under HTS 0404.90.3000. Since the year 2000, over-quota imports for this TRQ have exceeded in-quota imports. In 2002 and 2003, the quota was filled in January of each year (Foreign Agricultural Service, USDA, *Dairy Monthly Imports*).

LEGISLATION PROPOSED TO IMPOSE TRQS ON MPCS AND CERTAIN CASEIN PRODUCTS

In response to the increase in imports of milk protein products, the House (HR-1160) and Senate (S-560) have introduced identical bills that would impose TRQs on MPCs and certain casein products. The short title for both bills is the "Milk Import Tariff Equity Act." The House bill is sponsored by Representative Don Sherwood of Pennsylvania along with 159 cosponsors. The Senate bill is sponsored by Senator Larry E. Craig of Idaho along with 28 cosponsors. The House bill has been referred to the Subcommittee on Trade. The Senate bill has been referred to the Committee on Finance. Under the proposed legislation, Chapter 4 MPCs would have a TRQ of 15,818 metric tons, with an import tariff of 0.37 cents per kilogram (0.168 cents per pound) for in-quota imports and an import tariff of $1.56 per kilogram (70.8 cents per pound) for over-quota imports. Edible Chapter 35 casein products (MPCs, casein, caseinates, and other casein derivatives) would have a TRQ in aggregate of 54,051 metric tons, with an in-quota import tariff

of 0.37 cents per kilogram (0.168 cents per pound) and an over-quota import tariff of $2.16 per kilogram (98.0 cents per pound). The 0.37-cents-per-kilogram in-quota tariff would the same as the general tariff now in effect for MPCs, caseinates, and casein derivatives. Whereas casein, whether edible or industrial, is now imported with no tariff, the in-quota tariff of 0.37 cents per kilogram (0.168 cents per pound) would apply to edible casein. The tariff would remain at zero for imports of industrial-use casein. In order to comply with NAFTA, quantity limitations would not apply to Mexico.[11] These bills are summarized in Table 6.

Table 6. Provisions Proposed by House Bill HR-1160 and Senate Bill S-560 of the 108th Congress

Product Category	Tariff Rate Quota	Tariffs	
		In-Quota	Over-Quota
	(metric tons)	($ per kg.)[2]	($ per kg.)
Chapter 4 MPCs	15,818	0.0037	1.56
Chapter 35 MPCs, casein, caseinates, and other casein derivatives[1]	54,051	0.0037	2.16

[1] The tariff rate quota would exclude casein glues and casein for industrial use not suitable for human or animal consumption.
[2] Dollars per pound can be calculated by dividing dollars per kilogram by 2.204623.

Compared to other dairy products, the proposed in-quota tariff is low while the proposed over-quota tariff is relatively high.[12] The specific in-quota tariff of 0.37 cents per kilogram (0.168 cents per pound) proposed for MPCs, and edible casein would be the lowest specific in-quota tariff assessed by weight. "Milk & cream, concentrated in non-solid forms, not sweetened, in airtight containers" has the next lowest in-quota specific tariff on a weight basis—2.2 cents per kilogram (1.0 cent per pound), about 6 times the proposed in-quota rate for MPCs and edible casein products. Some dairy products have no tariff. These include soft-ripened cheeses and cheeses made from some other type of milk than cow's milk. The proposed specific over-quota tariff of $1.56 per kilogram (70.8 cents per pound) for Chapter 4 MPCs is close to the over-quota tariff of $1.556 per kilogram (70.58 cents per pound) for milk powder containing more than 35 percent fat but no sweetening matter. Imports of this product have been small, only 7.2 metric tons in 2002. The proposed over-quota specific tariff of $2.16 per kilogram (98.0 cents per pound) for Chapter 35 MPCs and edible casein products is close to the over-quota tariff of $2.146 (97.34 cents per pound) for Italian-type cheeses. The only dairy products with a higher specific over-quota tariff by weight, $2.269 per kilogram ($1.0292 per pound), are blue mold cheeses.

[11] Quantity limitations would apply to Canada. NAFTA has done much more to liberalize U.S. dairy trade with Mexico than with Canada.
[12] Comparison to other tariffs is complicated by the fact that some tariffs are assessed on an ad valorem basis, specific basis, or a combination of both. In addition, some tariffs are based on a volume measure (per liter) rather than a weight measure (per kilogram). For these reasons, this paragraph limits comparison to only other products with specific tariffs assessed per kilogram.

Table 7 provides information concerning imports of milk protein products and some products that substitute for milk protein products to some extent: dried skim milk products; dried whole milk products; and milk and cream products, concentrated or condensed, in non-solid form. (See Appendix C for more details.) Of these categories, milk protein products have had, by far, the largest volume of imports in recent years. Not including Mexico, imports of the competing products appear to have been constrained to a level of slightly more than 100 percent of the TRQs. In some years, imports of the competing products do not reach the TRQ level. If the proposed TRQs for milk protein products were implemented, it seems likely that there would be some shift in imports from milk protein products to competing products. The limiting effect of the TRQs would probably lead to greater reallocation from domestic sources and Mexico rather than other foreign sources. Given the limited substitutability of the competing products, the proposed TRQs could possibly boost the domestic market for production of milk protein products. Costs to manufacturers using these dairy ingredients would most likely increase. Future free trade agreements could lead to some reallocation of imports from those countries involved—in either milk protein products or competing products.

A principal concern among many lawmakers is compliance of trade legislation with WTO commitments. The tariffs now in place for milk protein products are Bound Rates of Duty[13] according to U.S. commitments under URAA (WTO, *Uruguay Round Goods Schedule for the United States*). The proposed legislation allows the President to negotiate "compensation in order to maintain the general level of reciprocal and mutually advantageous concessions." He would be limited, however, in that he would not be allowed to make any proclamations that would decrease "any general rate of duty to a rate which is less than 70 percent of the existing general rate of duty." The WTO states: "Countries can break a commitment (i.e., raise a tariff above the bound rate), but only with difficulty. To do so they have to negotiate with the countries most concerned and that could result in compensation for trading partners' loss of trade" (WTO, "Tariffs: More Bindings Close to Zero").

OTHER POSSIBLE TRADE POLICY OPTIONS CONSIDERED TO LIMIT IMPORTS OF MILK PROTEIN PRODUCTS

In an April 2001 paper, NMPF listed four policy options[14] that it would review in an effort to limit imports of milk protein products:

- Petitioning for a Global Safeguard Investigation as provided by Section 201 of the Trade Act of 1974. If the International Trade Commission (ITC) finds that a domestic industry has been seriously injured due to increased imports, it can recommend a remedy to the President. "Such relief may be in the form of a tariff increase, quantitative restrictions, or orderly marketing agreements" (ITC, "Section 201, Trade Act of 1974 [Global Safeguard Investigations], Import Relief for Domestic Industries").

[13] A "duty" is a tax. The term most commonly used when referring to import tariffs.
[14] Although all four policy options are listed in NMPF's paper, explanations for the first two options are quoted from other sources.

Table 7. U.S. Imports and Tariff Rate Quota (TRQ) Information of Selected Dairy Products
(Import volumes are in metric tons. Tariffs in $ per kilogram.[1])

Table 7a. Milk Protein Concentrates (MPCs) and Casein Products

Year	Milk Protein Concentrates		Casein		Caseinate and Other Casein Derivatives [2]	
	Tariff	Imports	Tariff	Imports	Tariff	Imports
1998	$0.0039	39,848	$0.0000	70,394	$0.0039	29,929
1999	$0.0038	54,584	$0.0000	66,162	$0.0038	32,512
2000	$0.0037	64,849	$0.0000	74,170	$0.0037	33,887
2001	$0.0037	35,403	$0.0000	61,617	$0.0037	38,234
2002	$0.0037	41,441	$0.0000	57,519	$0.0037	34,699

Table 7b. Dried Skim Milk Products, Chapter 4, Additional Note 7 [3]

Year	Imports From Countries Other Than Mexico					Mexico		Total Imports
	In-quota Tariff [4]	Over-quota Tariff	TRQ	Imports	Percent of TRQ	Over-quota Tariff [5]	Imports	
1998	$0.033	$0.916	3,661.0	3,830.9	104.6%	$0.493 or 39.0%	0	3,830.9
1999	$0.033	$0.890	4,461.0	4,611.9	103.4%	$0.394 or 31.2%	0	4,611.9
2000	$0.033	$0.865	5,261.0	3,171.8	60.3%	$0.296 or 23.4%	0	3,171.8
2001	$0.033	$0.865	5,261.0	2,571.7	48.9%	$0.197 or 15.6%	27.2	2,598.9
2002	$0.033	$0.865	5,261.0	5,237.7	99.5%	$0.099 or 7.8%	0	5,237.7

Table 7c. Dried Whole Milk Products, Chapter 4, Additional Note 8

Year	Imports From Countries Other Than Mexico					Mexico		Total Imports
	In-quota Tariff	Over-quota Tariff	TRQ	Imports	Percent of TRQ	Over-quota Tariff	Imports	
1998	$0.068	$1.156	2,141.3	2,261.6	105.6%	$0.529 or 41.6%	269.6	2,531.2
1999	$0.068	$1.124	2,731.3	2,920.2	106.9%	$0.423 or 33.2%	306.0	3,226.2
2000	$0.068	$1.092	3,321.3	2,049.2	61.7%	$0.317 or 24.9%	589.5	2,638.7
2001	$0.068	$1.092	3,321.3	3,263.4	98.3%	$0.212 or 16.6%	508.8	3,772.2
2002	$0.068	$1.092	3,321.3	3,242.1	97.6%	$0.106 or 8.3%	605.7	3,847.8

Table 7d. Milk and Cream Products, Concentrated or Condensed in Non-solid Form, Chapter 4, Additional Note 11

Year	Imports From Countries Other Than Mexico					Mexico		Total Imports
	In-quota Tariff	Over-quota Tariff	TRQ	Imports	Percent of TRQ	Over-quota Tariff	Imports	
1998	$0.022 to $0.039	$0.331 to $0.525	5,257.3	3,973.8	75.6%	$0.149 or 41.8% to $0.244 or 47.4%	981.5	4,955.3
1999	$0.022 to $0.039	$0.322 to $0.511	6,057.3	6,173.8	101.9%	$0.119 or 33.4% to $0.195 or 37.9%	1,141.7	7,315.5
2000	$0.022 to $0.039	$0.313 to $0.496	6,857.3	7,674.1	111.9%	$0.089 or 25.1% to $0.146 or 28.4%	1,909.8	9,583.9
2001	$0.022 to $0.039	$0.313 to $0.496	6,857.3	9,174.2	133.8%	$0.06 or 16.7% to $.097 or 19%	1,444.5	10,618.7
2002	$0.022 to $0.039	$0.313 to $0.496	6,857.3	6,602.2	96.3%	$0.03 or 8.4% to $0.049 or 9.5%	3,744.5	10,346.7

Sources: Foreign Agricultural Service, *Dairy Monthly Imports* and *U.S. Trade Internet System; Harmonized Tariff Schedule of the United States (HTS).* See Appendix C for more details.

[1] $ per kg. may be converted to $ per pound by dividing by 2.204623.

[2] Casein glues are excluded from import numbers.

[3] References such as "Chapter 4, Additional Note 7" refer to TRQs other than for Mexico listed in the HTS. Imports from Mexico were subject to separate TRQs under broader groupings than other countries through 2002. In this table, imports are grouped according to TRQs other than for Mexico for comparison purposes. TRQs for imports from Mexico expired at the end of 2002. Imports from Mexico are now received tariff free.

[4] In-quota imports from Canada and some imports from Israel were tariff free.

[5] Some TRQ categories include several products with various tariff rates. Tariffs for imports from Mexico were specific or ad valorem based upon the unit value of the imports.

- Petitioning for an investigation by the U.S. Trade Representative (USTR) as provided by Section 301 of the Trade Act of 1974. This provision "…is the principal statutory authority under which the United States may impose trade sanctions against foreign countries that maintain acts, policies and practices that violate, or deny U.S. rights or benefits under, trade agreements, or are unjustifiable, unreasonable or discriminatory and burden or restrict U.S. commerce" (Grier).

- Attempting to use antidumping laws. NMPF states:

> U.S. law provides that if imports occur at "less than fair value" and are causing or threatening "material injury" to a domestic industry, then relief will be provided in the form of additional duties assessed in an amount by which the "normal value" of the goods exceeds the "export price."
>
> (NMPF, *Milk Protein Imports: Impact on U.S. Dairy Producers*)

- Attempting to use countervailing measures to investigate foreign government subsidies. NMPF states:

> U.S. law permits the assessment of an additional customs duty where it has been determined that the government of another country (or a public entity within that country) is providing, directly or indirectly, a subsidy with respect to the manufacture, production of merchandise being imported; and that imports of such merchandise are causing or threatening material injury to a U.S. industry (or that the establishment of the industry is being materially retarded).
>
> (NMPF, *Milk Protein Imports: Impact on U.S. Dairy Producers*)

In a March 2003 newsletter by Dairy Producers for Fair Trade, a coalition of 30 farm groups working with NMPF, these measures were cited as inferior to legislation because either they would not provide a long-term solution or they would take an excessive amount of time to complete.

PRODUCTION OF DRY MILK PROTEIN PRODUCTS IN THE U.S.

Sales of Government-Owned NDM for Conversion to Casein and Caseinate

Section 105 [7 U.S.C. 1446c–2] of The Food Security Act of 1985 states:

a) The Commodity Credit Corporation shall provide surplus stocks of nonfat dry milk of not less than 1,000,000 pounds annually to individuals or entities on a bid basis.

b) The Commodity Credit Corporation may accept bids at lower than the resale price otherwise required by law, in order to promote the strengthening of the domestic casein industry.

c) The Commodity Credit Corporation shall take appropriate action to ensure that the nonfat dry milk sold by the Corporation under this section is used only for the manufacture of casein.

(Food Security Act of 1985)

The Commodity Credit Corporation of USDA (CCC) began a program for selling NDM for manufacture into casein in 1986. However, the program generated little interest. The CCC accepted only three offers totaling about one-half million pounds in 1986 and 1987. The program was discontinued in the 1987-88 marketing year (Agricultural Stabilization and Conservation Service).

The growing stocks of government-owned NDM in recent years prompted the CCC to take renewed action with respect to the 1985 law. On October 22, 2001, the CCC announced a field test to sell NDM for conversion to edible casein or caseinate at a cost of 10 cents per pound. The NDM under consideration was between 18 and 30 months old. Participants were responsible for the costs of transportation from storage facilities, research and development, production, sales, and distribution of the product. They were required to provide written progress reports to the CCC. On May 10, 2002, the CCC announced that the field tests had been completed, indicating sufficient benefits for CCC to offer NDM for conversion to casein or caseinate. CCC made NDM available for sale on a competitive offer basis for manufacture of edible casein or caseinate. As of November 2003, activity in this program had been limited—about 6.3 million pounds. Some processors have asked for guarantees from USDA that NDM will continue to be available at a low price before making capital investments to produce casein or caseinate.

Proposal to Subsidize Development of Domestic Manufacture of Milk Protein Products

The Alliance of Western Milk Producers (Alliance) and NMPF have proposed that a U.S. Dairy Proteins Program be established to subsidize a domestic casein and MPC industry. They assert that such a program would require no additional legislation. Section 5 of the CCC Charter Act and authorizes the CCC to:

d. Remove and dispose of or aid in the removal or disposition of surplus agricultural commodities.

e. Increase the domestic consumption of agricultural commodities by expanding or aiding in the expansion of domestic markets or by developing or aiding in the development of new and additional markets, marketing facilities, and uses for such commodities.

(Commodity Credit Corporation Charter Act)

The Alliance and NMPF propose that the program operate according to the following procedures as quoted below:

- The program will be a ten-year pilot program. This time period is necessary for the dairy processing community to make the investment required to produce the products eligible for the program.

- The Commodity Credit Corporation (CCC) will issue an invitation for competitive offers to receive a bonus to produce and market edible acid or rennet casein, edible caseinate, or milk protein concentrate obtained through the ultra-filtration of liquid skim milk with solids content of not less than 60 per cent protein. Final products can be in either dry or liquid concentrated forms.

- To be eligible to receive a bonus under this program, the offerer must produce the products for which a bonus is sought in a manufacturing facility located within, and using liquid skim milk produced in, the 48 contiguous United States.

- Receipt of a CCC bonus shall be contingent upon the end use of the products produced.

- Products used to produce standardized cheeses will not be eligible to receive a bonus under the program.

- Offerers shall submit an offer to receive a CCC bonus specifying the buyer, the quantity to be sold, the contract price, the CCC bonus requested, the end use of the product, and when the product will be delivered to the buyer.

- USDA shall evaluate each contract and ensure that it does not result in undercutting of domestic prices; that the CCC bonus requested is not excessive; and that the sale represents a new use of the domestic produced dairy proteins.

(Alliance and NMPF)

Alliance and NMPF claim that such a program would help producers develop new commercial uses for nonfat milk solids, reduce NDM in CCC storage, and "provide long-term relief from further erosion of the dairy price support program." USDA is currently studying the proposal.

Domestic Manufacture of MPCs

In May 2000, Dairy Farmers of America (DFA) and the New Zealand Dairy Board (NZDB) launched DairiConcepts, L.P. (DairiConcepts), as a 50-50 joint venture between the two companies. DairiConcepts is headquartered in Springfield, Missouri. The company was formed to capitalize on the vertical integration and spray-dry expertise of DFA's Food Ingredients Division and the cheese development skills and production technology of NZMP,[15] the ingredient business of NZDB (Baird). DFA is the largest

[15] NZMP was formerly New Zealand Milk Products. Currently, the business simply uses the acronym NZMP as the company name.

dairy cooperative in the United States, marketing about 45.6 billions pounds of milk in 2001, about 28 percent of the U.S. milk supply. It recorded sales of $7.9 billion in 2001. It is a complex organization, operating an affiliate network to expand fluid milk sales and several joint ventures with respect to manufacturing. NZMP is the world's largest dairy ingredient company, marketing products in 100 countries and operating a vast network of offices. DairiConcepts has eight U.S. factories producing dairy powder, parmesan cheese, dairy flavors, and most recently—MPC (Dann).

New Zealand's Dairy Industry Restructuring Act of 2001 authorized the merger of NZDB with two large dairy cooperatives, Kiwi Cooperative and the New Zealand Dairy Group. The company formed from this merger became Fonterra Cooperative Ltd. (Fonterra).[16] Kiwi Cooperative and the New Zealand Dairy Group together had accounted for about 95 percent of New Zealand's milk production in 2000. Before the union of the NZDB and the two cooperatives, NZDB had served as the government-granted, single-desk (monopoly) exporter for New Zealand's cooperatives. The Dairy Industry Restructuring Act of 2001 ended the monopoly status of NZDB by removing "restrictions on the export of dairy products except for exports to designated markets." Although the act ended NZDB's monopoly status, NZDB's exclusive rights for export to "designated markets" remains substantial, including certain dairy products exported to Canada, the European Communities, the United States, Japan, and the Dominican Republic. The time period for the restrictions varies by country and commodity.

In October 2001, DairiConcepts was given approval to buy a manufacturing plant in Portales, New Mexico. The plant was modified to produce MPC70 and is now in production. According to Fonterra's 2001-2002 annual report, the $34 million plant has the capacity to produce about 4.5 metric tons of MPC70 per hour.[17] According to the GAO report, MPC70 produced by NZMP has a composition of 71% protein, 1% fat, 7% ash, and 17% lactose. The suggested uses of the product are "sports nutrition drinks and bars, aged care products, hospital rehabilitation products, and pasteurized process cheese products."

In a presentation at Fonterra's September 10, 2003, annual meeting, Chairman Henry van Heyden stated that DairiConcepts is "growing strongly and delivering superior margins." In a March 1, 2002, DFA news release CEO Gary Hanman states:

> Domestically produced MPC will offset imports now being used by many of our customers as an economic and efficient ingredient in the processing of many dairy-based food and beverage products. It is time for DFA members to share in the market of this valued ingredient and, ultimately, utilize more DFA-produced milk.
>
> (Hanman, as cited by Dobson and Wilcox)

[16] The company was called Globalco for a short period of time after the merger.
[17] Fonterra's annual report values the plant at $73 million New Zealand dollars. For this paper, New Zealand dollars were converted to U.S. dollars using a year 2002 exchange rate of $NZ 2.142 / $US. The exchange rate was taken from USDA's Economic Research Service Agricultural Exchange Rate Data Set.

On July 8, 2003, Fonterra announced that DFA and Fonterra had signed a Memorandum of Understanding to formalize their partnership. "The Memorandum sets up a formal framework within which Fonterra and DFA can present partnership proposals to each other, decide which are of mutual interest, and invest in the most attractive options. These opportunities may or may not be included within DairiConcepts" (Fonterra, *Fonterra and Dairy Farmers of America Formalise Partnership*). DairiConcepts sales in 2003 were expected to reach NZ $500 million to customers such as Nestle, Frito-Lay, Kraft, Unilever, and Mead Johnson (USDA Foreign Agriculture Service, *New Zealand Dairy and Products, Annual 2003*).

ITC GENERAL FACT-FINDING INVESTIGATION

On May 14, 2003, the ITC received a request from the Senate Committee on Finance to investigate the *Condition of Competition for Milk Protein Products in the U.S. Market*. The ITC launched the general fact-finding investigation on June 5, 2003, under section 332(g) of the Tariff Act of 1930. The investigation focuses on several issues related to milk proteins: an overview of global markets, profiles of major exporting countries, relationships to government support programs, uses of products, tariff classification history, effects on farmgate milk prices, and other competitive factors. The ITC will collect data and views by use of a questionnaire. Responses are expected from 250 purchasers, 185 importers, and 25 foreign producers. Proposed questionnaires were made available to the public for comment upon request by telephone. A public hearing concerning the issues was held on December 11, 2003, at the ITC Building in Washington, DC. Hearing participants included ambassadors from Australia and New Zealand; domestic dairy producers and their representatives; dairy manufacturers and their representatives; academic dairy economists; and dairy industry representatives from Australia, New Zealand, and the European Union. The ITC has also invited interested parties to submit written statements concerning the investigation. The ITC is scheduled to transmit its report to the Senate Committee on Finance on May 14, 2004. The Committee has indicated that it plans to make the report available to the public.

In March 2003, before the investigation was launched, Dairy Producers for Fair Trade stated opposition to an ITC investigation: "In particular, a Section 332 case would merely result in a recompilation of data and facts which have already been determined. A Section 332 case would not impose tariffs; it would simply delay the legislative process…" IDFA states an opposing point of view: "Much of the debate has been characterized by a lack of solid facts about these products and this investigation promises to fill that void and will, we are convinced, lay the factual and analytical groundwork for damaging trade-restricting legislation" (IDFA, *ITC Investigation on MPC, Casein, and Caseinates Shifts into High Gear*).

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APPENDIX A

Food and Drug Administration, Department of Human Services
Standard of Identity for Cheddar Cheese

[Code of Federal Regulations]
[Title 21, Volume 2, Parts 100 to 169]
[Revised as of April 1, 2000]
From the U.S. Government Printing Office via GPO Access
[CITE: 21CFR133.113]

TITLE 21--FOOD AND DRUGS

CHAPTER I--FOOD AND DRUG ADMINISTRATION, DEPARTMENT OF HEALTH AND HUMAN SERVICES--CONTINUED

PART 133--CHEESES AND RELATED CHEESE PRODUCTS--Table of Contents

Subpart B--Requirements for Specific Standardized Cheese and Related Products

Sec. 133.113 Cheddar cheese.

(a) Description. (1) Cheddar cheese is the food prepared by the procedure set forth in paragraph (a)(3) of this section, or by any other procedure which produces a finished cheese having the same physical and chemical properties. The minimum milkfat content is 50 percent by weight of the solids, and the maximum moisture content is 39 percent by weight, as determined by the methods described in Sec. 133.5. If the dairy ingredients used are not pasteurized, the cheese is cured at a temperature of not less than 35 deg.F for at least 60 days.

(2) If pasteurized dairy ingredients are used, the phenol equivalent value of 0.25 gram of cheddar cheese is not more than 3 micrograms as determined by the method described in Sec. 133.5.

(3) One or more of the dairy ingredients specified in paragraph (b)(1) of this section may be warmed, treated with hydrogen peroxide/ catalase, and is subjected to the action of a lactic acid-producing bacterial culture. One or more of the clotting enzymes specified in paragraph (b)(2) of this section is added to set the dairy ingredients to a semisolid mass. The mass is so cut, stirred, and heated with continued stirring, as to promote and regulate the separation of whey and curd. The whey is drained off, and the curd is matted into a cohesive mass. The mass is cut into slabs, which are so piled and handled as to promote the drainage of whey and the development of acidity. The slabs are then cut into pieces, which may be rinsed by sprinkling or pouring water over them, with free and continuous drainage; but the duration of such rinsing is so limited that only the whey on the surface of such pieces is removed. The curd is salted, stirred, further drained, and pressed into forms. One or more of the other optional ingredients specified in paragraph (b)(3) of this section may be added during the procedure.

(b) Optional ingredients. The following safe and suitable ingredients may be used:

(1) Dairy ingredients. Milk, nonfat milk, or cream, as defined in

Sec. 133.3, used alone or in combination.

(2) Clotting enzymes. Rennet and/or other clotting enzymes of animal, plant, or microbial origin.

(3) Other optional ingredients. (i) Coloring.

(ii) Calcium chloride in an amount not more than 0.02 percent (calculated as anhydrous calcium chloride) of the weight of the dairy ingredients, used as a coagulation aid.

(iii) Enzymes of animal, plant, or microbial origin, used in curing or flavor development.

(iv) Antimycotic agents, applied to the surface of slices or cuts in consumer-sized packages.

(v) Hydrogen peroxide, followed by a sufficient quantity of catalase preparation to eliminate the hydrogen peroxide. The weight of the hydrogen peroxide shall not exceed 0.05 percent of the weight of the milk and the weight of the catalase shall not exceed 20 parts per million of the weight of the milk treated.

(c) Nomenclature. The name of the food is ``cheddar cheese''.

(d) Label declaration. Each of the ingredients used in the food shall be declared on the label as required by the applicable sections of parts 101 and 130 of this chapter, except that:

(1) Enzymes of animal, plant, or microbial origin may be declared as “enzymes”; and

(2) The dairy ingredients may be declared, in descending order or predominance, by the use of the terms ``milkfat and nonfat milk'' or ``nonfat milk and milkfat'', as appropriate.

[48 FR 2743, Jan. 21, 1983; 48 FR 11426, Mar. 18, 1983, as amended at 58 FR 2892, Jan. 6, 1993]

APPENDIX B

Lists of FDA Cheese Standards With and Without Alternate Make Procedure Provisions

(From Attachment B to NCI's petition to the FDA requesting amendment to Standards of Identity, Section 133.3—Cheese and Related Products)

The standards of identity for the following cheeses provide for alternate make procedures:

1. § 133.102 Asiago fresh and asiago soft cheese
2. § 133.103 Asiago medium cheese
3. § 133.104 Asiago old cheese
4. § 133.106 Blue cheese
5. § 133.108 Brick cheese
6. § 133.109 Brick cheese for manufacturing
7. § 133.111 Caciocavallo Siciliano cheese
8. § 133.113 Cheddar cheese
9. § 13 3.114 Cheddar cheese for manufacturing
10. § 133.116 Low sodium cheddar cheese
11. § 133.118 Colby cheese
12. § 133.119 Colby cheese for manufacturing
13. § 133.121 Low sodium Colby cheese
14. § 133.127 Cook cheese, koch kaese
15. § 133.133 Cream cheese
16. § 133.136 Washed curd and soaked curd cheese
17. § 13 3.137 Washed curd cheese for manufacturing
18. § 133.138 Edam cheese
19. § 133.140 Gammelost cheese
20. § 133.141 Gorgonzola cheese
21. § 133.142 Gouda cheese
22. § 133.144 Granular and stirred curd cheese
23. § 133.145 Granular cheese for manufacturing
24. § 133.149 Gruyere cheese
25. § 133.152 Limburger cheese
26. § 133.153 Monterey cheese and monterey jack cheese
27. § 133.154 High-moisture jack cheese
28. § 133.155 Mozzarella cheese and scamorza cheese
29. § 133.156 Low-moisture mozzarella and scamorza cheese
30. § 133.157 Part-skim mozzarella and scamorza cheese
31. § 133.158 Low-moisture part-skim mozzarella and scamorza cheese
32. §133.160 Muenster and munster cheese
33. § 133.161 Muenster and munster cheese for manufacturing
34. § 133.162 Neufchatel cheese
35. § 133.164 Nuworld cheese

36. § 133.165 Parmesian and reggiano cheese
37. § 133.181 Provolone cheese
38. § 133.183 Romano cheese
39. § 133.184 Roquefort cheese, sheep's milk blue-mold, and blue-mold cheese from milk sheep's milk
40. § 133.185 Samsoe cheese
41. § 133.186 Sap sago cheese
42. § 133.189 Skim milk cheese for manufacturing[18]
43. § 133.190 Spiced cheeses
44. § 133.191 Part-skin spiced cheeses
45. § 133.195 Swiss and emmentaler cheese
46. § 133.196 Swiss cheese for manufacturing

The standards of identity for the following cheeses do not provide for alternate make procedures:

1. § 133.123 Cold-pack and club cheese
2. § 133.125 Cold-pack cheese food with fruits, vegetables, or meats
3. § 133.128 Cottage cheese
4. § 133.129 Dry curd cottage cheese
5. § 133.134 Cream cheese with other foods
6. § 133.146 Grated cheeses
7. § 133.147 Grated American cheese food
8. § 133.148 Hard grating cheeses
9. § 133.150 Hard cheeses
10. § 133.167 Pasteurized blended cheese
11. § 133.168 Pasteurized blended cheese with fruits, vegetables, or meats
12. § 133.169 Pasteurized process cheese
13. § 133.170 Pasteurized process cheese with fruits, vegetables, or meats
14. § 133.171 Pasteurized process pimento cheese
15. § 133.173 Pasteurized process cheese food
16. § 133.174 Pasteurized process cheese food with fruits, vegetables, or meats
17. § 133.175 Pasteurized cheese spread
18. § 133.176 Pasteurized cheese spread with fruits, vegetables, or meats
19. § 133.178 Pasteurized neufchatel cheese spread with other foods
20. § 133.179 Pasteurized process cheese spread
21. § 133.180 Pasteurized process cheese spread with fruits, vegetables, or meats
22. § 133.182 Soft ripened cheeses
23. § 133.187 Semisoft cheeses
24. § 133.188 Semisoft part-skim cheeses
25. § 133.193 Spiced, flavored standardized cheeses

[18]In NCI et al.'s petition, skim milk cheese for manufacturing, § 133.189, was included in the both lists: for cheese standards that do include alternate make provisions and those that do not. This appears to be in error. The standard states that the cheese may be manufactured "by another procedure which produces a finished cheese having the same physical and chemical properties."

APPENDIX C

Sources and Compilation of Data for Table 7

The main source of import data used for Table 7 is the circular *Dairy Monthly Imports* (circular). The circular is prepared each month by the Import Policies and Programs Division (IPPD) of USDA's Foreign Agricultural Service (FAS). IPPD compiles the circular each month from data received directly from Customs. Another source used for the Table 7 is the *FAS Online U.S. Trade Internet System* (FAS database), which uses data provided by the U.S. Census Bureau (Census). Census receives its import data from Customs. The circular aggregates import data according to TRQ categories while the FAS database aggregates import data according to HTS numbers. Although all of the data for both sources originates with the Customs, there are some inconsistencies between them. Data from the circular is revised more extensively and appears to be somewhat more reliable than data from the FAS database. For these reasons, data for Table 7 is taken from the circular when possible. The FAS database is used for some of the data not supplied by the circular. Tariff information for Table 7 is taken from HTS data provided through the ITC Interactive Tariff and Trade DataWeb.

Data for imports of MPCs, Casein, and Caseinates is straightforward. Since the circular contains no information concerning non-TRQ products, this data is simply taken from the FAS database.

Table C-1 displays HTS numbers for the selected dairy products. Most tariffs for dairy products are listed in Chapter 4 of the HTS and begin with a 04 number. Tariffs for Mexico are listed separately under Chapter 99 in the HTS. Tariff lines in Chapter 99 cross-reference the corresponding over-quota HTS codes applying to countries other than Mexico. While the HTS lists tariffs for Mexico separately in Chapter 99, the FAS database includes imports from Mexico, whether in-quota or over-quota, under the same HTS numbers used for over-quota imports from other countries.

Table C-2 displays tariffs for countries not subject to Free Trade Agreements. These tariffs apply to countries other than Mexico. In-quota imports from Canada are received tariff free. Some imports from Israel are also received tariff free; for the selected products, this treatment applies only to dried skim milk products. Table C-3 displays tariffs for Mexico. Specific tariffs for Mexico were applied to products with unit values not over a specified amount. Ad valorem tariffs were applied for unit values above the amount. Tariffs for Mexico were phased out and were eliminated at the end of 2002. Imports from Mexico are now received tariff free.

Tables C-4 and C-5 display U.S. imports of dried skim milk and whole milk products. For countries other than Mexico, TRQs for these products are found under Chapter 4, Additional Notes 7 and 8 of the HTS. Small quantities of dried skim milk products have been imported tariff free under the U.S.-Israel Agreement on Trade in Agricultural Products. Although other dairy products are included in the agreement, of the selected products, the agreement only applies to dried skim milk. For Tables C-4 and C-5, all of

the import data, both in-quota and over-quota, other than for Mexico, is provided by the circular. The circular provides in-quota import data for Mexico, but the TRQs for Mexico were grouped under broader categories than for other countries. Dried skim milk products, dried whole milk products, and animal feeds were all included under the same TRQ for Mexico. Over-quota imports from Mexico are not included in the circular. For these reasons, the FAS database rather than the circular was used to compile data for imports from Mexico. It may seem curious that there are over-quota imports each year even though the quota was not filled. There are two reasons for this: (1) In-quota imports of dry skim milk products and whole milk products require a license. (2) Some countries have a specified amount allocated within a particular quota. There are also allocations allowed for "any country." If a country fills its allocation for a particular TRQ, and the "any country" allocation is filled or nearly filled, it may export more to the U.S. at the over-quota rate.

Table C-6 displays U.S. imports of milk and cream products, concentrated or condensed in non-solid Form. For countries other than Mexico, TRQs for these products are found under Chapter 4, Additional Note 11 of the HTS. In contrast, dry skim milk and dry whole milk products, the in-quota imports for products referenced in Table C-6 do not require a license. Instead, the quota is allocated on a first come, first served basis. For these types of products, the circular provides only data concerning in-quota imports. For other data in the table, the FAS database is used. To compute over-quota imports from countries other than Mexico, world import numbers for HTS codes 04029170, 04029190, 04029945, 04029955 are taken from the FAS database. These codes include over-quota imports from all non-Mexico countries as well as in-quota and over-quota imports from Mexico. The imports from Mexico are subtracted from these numbers to determine the over-quota imports from countries other than Mexico.

Table C-1. Harmonized Tariff Rate Schedule of the United States (HTS) Numbers for Selected Dairy Products

Chapter 4, Additional Note 7: Dried Skim Milk [1]	Other than Mexico		Mexico		
				Over Quota	
	In Quota	Over Quota	In Quota	Valued not over $1.26 per	Other
Dried Skim Milk, <1.5% BF	04021010	04021050	99060407	99060408	99060409
Dried Skim Milk, >1.5% BF, <3% BF	04022105	04022125	99060414	99060415	99060416

Chapter 4, Additional Note 8: Dried Whole Milk	Other than Mexico		Mexico		
				Over Quota	
	In Quota	Over Quota	In Quota	Valued not over $1.27 per	Other
Whole Milk Powder	04022130	04022150	99060417	99060418	99060419
Dried Sour Cream,<45% BF	04039051	04039055	99060442	99060443	99060444

Chapter 4, Additional Note 11: Milk and Cream, Condensed	Other than Mexico		Mexico		
				Over Quota	
	In Quota	Over Quota	In Quota	Valued not over 35.7¢/kg	Other
Milk & cream, concentrated in non-solid forms, not sweetened, in airtight containers	04029110	04029170	99060426	99060427	99060428
Milk & cream, concentrated in non-solid forms, not sweetened, not in airtight containers	04029130	04029190			
				Valued not over 51.5¢/kg	Other
Condensed milk, sweetened, in airtight containers	04029910	04029945	99060429	99060430	99060431
Condensed milk, sweetened, not in airtight containers	04029930	04029955			

Source: *Harmonized Tariff Schedule of the United States*

[1] References such as "Chapter 4, Additional Note 7" refer to TRQs other than for Mexico listed in the HTS.

Table C-2. General Tariffs Not Subject to Free Trade Agreement for Selected Dairy Products (Tariffs are in $ per kilogram.)

Chapter 4, Additional Note 7: Dried Skim Milk [1]	1998		1999		2000		2001		2002	
	In Quota	Over Quota	In Quota	Over Quota	In Quota	Over Quota	In Quota	Over Quota	In Quota	Over Quota
Dried Skim Milk, <1.5% BF	$0.033	$0.916	$0.033	$0.890	$0.033	$0.865	$0.033	$0.865	$0.033	$0.865
Dried Skim Milk, >1.5% BF, <3% BF	$0.033	$0.916	$0.033	$0.890	$0.033	$0.865	$0.033	$0.865	$0.033	$0.865

Chapter 4, Additional Note 8: Dried Whole Milk	1998		1999		2000		2001		2002	
	In Quota	Over Quota	In Quota	Over Quota	In Quota	Over Quota	In Quota	Over Quota	In Quota	Over Quota
Whole Milk Powder	$0.068	$1.156	$0.068	$1.124	$0.068	$1.092	$0.068	$1.092	$0.068	$1.092
Dried Sour Cream,<45% BF	$0.068	$1.156	$0.068	$1.124	$0.068	$1.156	$0.068	$1.092	$0.068	$1.092

Chapter 4, Additional Note 11: Milk and Cream, Condensed	1998		1999		2000		2001		2002	
	In Quota	Over Quota	In Quota	Over Quota	In Quota	Over Quota	In Quota	Over Quota	In Quota	Over Quota
Milk & cream, concentrated in non-solid forms, not sweetened, in airtight containers	$0.022	$0.331	$0.022	$0.322	$0.022	$0.313	$0.022	$0.313	$0.022	$0.313
Milk & cream, concentrated in non-solid forms, not sweetened, not in airtight containers	$0.022	$0.331	$0.022	$0.322	$0.022	$0.313	$0.022	$0.313	$0.022	$0.313
Condensed milk, sweetened, in airtight containers	$0.039	$0.525	$0.039	$0.511	$0.039	$0.496	$0.039	$0.496	$0.039	$0.496
Condensed milk, sweetened, not in airtight containers	$0.033	$0.525	$0.033	$0.511	$0.033	$0.496	$0.033	$0.496	$0.033	$0.496

Source: *Harmonized Tariff Schedule of the United States*

[1] References such as "Chapter 4, Additional Note 7" refer to TRQs listed in the HTS.

Table C-3. Over-quota Tariffs for Mexico Under the North American Free Trade Agreement [1]
(Specific tariffs are in $ per kilogram. Ad valorem tariffs are listed as percentages.)

Chapter 4, Additional Note 7: Dried Skim Milk [2]	1998	1999	2000	2001	2002
Dried Skim Milk, <1.5% BF					
Valued not over $1.26 per kg.	$0.493	$0.394	$0.296	$0.197	$0.099
Other	39.0%	31.2%	23.4%	15.6%	7.8%
Dried Skim Milk, >1.5% BF, <3% BF					
Valued not over $1.26 per kg.	$0.493	$0.394	$0.296	$0.197	$0.099
Other	39.0%	31.2%	23.4%	15.6%	7.8%

Chapter 4, Additional Note 8: Dried Whole Milk	1998	1999	2000	2001	2002
Whole Milk Powder					
Valued not over $1.27 per kg.	$0.529	$0.423	$0.317	$0.212	$0.106
Other	41.6%	33.2%	24.9%	16.6%	8.3%
Dried Sour Cream,<45% BF					
Valued not over $1.27 per kg.	$0.529	$0.423	$0.317	$0.212	$0.106
Other	41.6%	33.2%	24.9%	16.6%	8.3%

Chapter 4, Additional Note 11: Milk and Cream, Condensed	1998	1999	2000	2001	2002
Milk & cream, concentrated in non-solid forms, not sweetened, in airtight containers					
Valued not over 35.7¢/kg	$0.149	$0.119	$0.089	$0.060	$0.030
Other	41.8%	33.4%	25.1%	16.7%	8.4%
Milk & cream, concentrated in non-solid forms, not sweetened, not in airtight containers					
Valued not over 35.7¢/kg	$0.149	$0.119	$0.089	$0.060	$0.030
Other	41.8%	33.4%	25.1%	16.7%	8.4%
Condensed milk, sweetened, in airtight containers					
Valued not over 51.5¢/kg	$0.244	$0.195	$0.146	$0.097	$0.049
Other	47.4%	37.9%	28.4%	19.0%	9.5%
Condensed milk, sweetened, not in airtight containers					
Valued not over 51.5¢/kg	$0.244	$0.195	$0.146	$0.097	$0.049
Other	47.4%	37.9%	28.4%	19.0%	9.5%

Source: *Harmonized Tariff Schedule of the United States*

[1] In-quota imports for Mexico were tariff free.

[2] References such as "Chapter 4, Additional Note 7" refer to TRQs other than for Mexico listed in the HTS. TRQs for Mexico were categorized using broader categories than these. For this table, tariffs are grouped according to TRQs other than for Mexico in order to make comparisons with tariffs listed in Table 2.

Table C-4. U.S. Imports: Chapter 4, Additional Note 7: Dried Skim Milk Products [1] (Volumes in metric tons.)

Year	From Circular [2]				Computed imports from countries other than Mexico	From FAS Database [3]	Computed total imports
	General--not subject to FTA [4]			Tariff-free under U.S.-Israel Agreement on Trade in Agricultural Products		Mexico imports for HTS [5] codes 04021050 & 04022125	
	Tariff rate quota	In quota	Over Quota				
1998	3,661.0	3,529.6	300.8	0.6	3,830.9	0.0	3,830.9
1999	4,461.0	4,355.6	255.5	0.8	4,611.9	0.0	4,611.9
2000	5,261.0	3,153.4	18.4	0.0	3,171.8	0.0	3,171.8
2001	5,261.0	2,566.6	4.5	0.6	2,571.7	27.2	2,598.9
2002	5,261.0	5,161.5	75.1	1.0	5,237.7	0.0	5,237.7

[1] "Chapter 4, Additional Note 7" refers to a TRQ other than for Mexico listed in the HTS. Dried skim milk products were grouped under a broader TRQ for Mexico that included most milk powders. In this table, imports are grouped according to TRQs other than for Mexico for comparison purposes.

[2] "Circular" refers to Foreign Agricultural Service, *Dairy Monthly Imports* .

3 "FAS Database" refers to Foreign Agricultural Service, *U.S. Trade Internet System* .

[4] FTA=Free Trade Agreement

[5] HTS=*Harmonized Tariff Schedule of the United States*

Table C-5. U.S. Imports: Chapter 4, Additional Note 8: Dried Whole Milk Products [1]
(Volumes in metric tons.)

Year	From Circular [2], general, not subject to FTA [3]			Computed imports from countries other than Mexico	From FAS Database	Computed total imports
	Tariff rate quota	In quota	Over quota		Mexico imports for HTS codes 04022150 and 04039055	
1998	2,141.3	2083.0	178.5	2261.6	269.6	2531.2
1999	2,731.3	2667.9	252.2	2920.2	306	3226.2
2000	3,321.3	1994.7	54.5	2049.2	589.5	2638.7
2001	3,321.3	3248.5	14.9	3263.4	508.8	3772.2
2002	3,321.3	3201.9	40.2	3242.1	605.7	3847.8

[1] "Chapter 4, Additional Note 8" refers to a TRQ other than for Mexico listed in the HTS. Dried whole milk products were grouped under a broader TRQ for Mexico that included most milk powders. In this table, imports are grouped according to TRQs other t

[2] "Circular" refers to Foreign Agricultural Service, *Dairy Monthly Imports* .

[3] FTA=Free Trade Agreement

[4] "FAS Database" refers to Foreign Agricultural Service, *U.S. Trade Internet System* .

[5] HTS=*Harmonized Tariff Schedule of the United States*

Table C-6. U.S. Imports: Chapter 4, Additional Note 11: Milk and Cream Products, Concentrated or Condensed in Non-solid Form [1] (Volumes in metric tons.)

Year	From Circular [2], general, not subject to FTA [3]		HTS [4] Codes 04029170, 04029190, 04029945, 04029955			Computed imports from countries other than Mexico	Computed total imports
			From FAS Database [5]		Computed over-quota imports: countries other than Mexico		
	Tariff rate quota	In Quota	World	Mexico			
1998	5,257.3	3,735.3	1220.0	981.5	238.5	3,973.8	4,955.3
1999	6,057.3	5,220.6	2094.9	1141.7	953.2	6,173.8	7,315.5
2000	6,857.3	5,923.5	3660.4	1909.8	1,750.6	7,674.1	9,583.9
2001	6,857.3	5,910.7	4708.0	1444.5	3,263.5	9,174.2	10,618.7
2002	6,857.3	5,945.7	4401.0	3744.5	656.5	6,602.2	10,346.7

[1] "Chapter 4, Additional Note 11" refers to a TRQ other than for Mexico listed in the HTS. "Milk and cream, condensed" products were grouped under a broader TRQ for Mexico that included a wide variety of dairy-related products that included such items as

[2] "Circular" refers to Foreign Agricultural Service, *Dairy Monthly Imports* .

[3] FTA=Free Trade Agreement

[4] HTS=*Harmonized Tariff Schedule of the United States*

[5] "FAS Database" refers to Foreign Agricultural Service, *U.S. Trade Internet System* .