Proposed Import Restrictions on Milk Protein Concentrates (MPCs)

Dennis A. Shields
Analyst in Agricultural Policy

Charles E. Hanrahan
Senior Specialist in Agricultural Policy

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Summary

Low farm milk prices and declining dairy sector income in 2009 renewed congressional interest in imposing new import barriers on milk protein concentrates (MPCs), which generally include casein, the main protein found in milk, and caseinates, a soluble form of casein. To limit U.S. imports of MPCs, the Milk Import Tariff Equity Act was introduced in the Senate (S. 1542) on July 30, 2009, and in the House (H.R. 3674) on September 29, 2009. Advocates of stricter import controls on MPCs say they would prevent the unlimited importation of milk protein, which would encourage the use of domestically produced protein and raise milk prices for dairy farmers. Opponents, including dairy product manufacturers, respond that the prospective move would increase their costs and result in higher retail food prices. MPCs are used in a variety of food products (e.g., infant formula, processed cheese products, and specialty sports and medical nutrition products), animal feed, and industrial products.

Currently, U.S. imports of MPCs are assessed very low or no tariffs while many other dairy product imports are restricted by tariff-rate quotas (TRQs), which impose low import duties on quantities inside a quota while quantities above the quota are charged higher duty rates. During most of the last decade, total imports of MPCs have hovered around 150,000 metric tons or less. Imports fill a gap in limited domestic production.

Until 1995, imports of almost all dairy products (butter, cheese, and dry milk) were subject to import quotas, which were established under Section 22 of the Agricultural Adjustment Act of 1933 to prevent imports from interfering with USDA domestic support programs. Dairy products that were not covered by section 22 quotas included casein, caseinates, whey, and soft-ripened cow’s milk cheese (e.g., brie). The 1995 Uruguay Round Agreement on Agriculture converted section 22 quotas (including dairy product quotas) into TRQs. Since MPCs and casein imports had not been restricted under section 22, they were not subject to TRQs.

The proposed bills in the 111th Congress, which are similar to previously introduced legislation, would establish two separate TRQs for (1) MPCs with a protein concentration of 40% to 90%, and (2) the combined imports of three products: milk protein concentrate (90% protein), casein, and caseinates. Based on recent trade data, more than half the annual trade in MPCs and casein/caseinates would be affected by the new, higher duties.

Under World Trade Organization (WTO) rules for any new U.S. restrictions on imports, enactment of the proposed legislation likely would entail the United States’ entering into compensation negotiations with WTO member countries that are major suppliers of MPCs to the U.S. market. The amount of compensation for which the United States might be liable would be on based on WTO formulas, recent trade data, and bilateral negotiations with principal suppliers.

Farm-level impacts of new TRQs depend on whether dairy product prices are below or above federal price support levels. If below, farm milk prices would likely not be affected because they would already be supported above market-clearing levels, and trade restrictions would simply limit government purchases of dairy products under the price support program. If above, farm prices would likely increase to the extent that product is withheld from the market. Based on recent trade data, this quantity is estimated to represent about 0.7% of U.S. milk production. The pace of USDA dairy product purchases slowed considerably in late summer 2009, leaving open the question of whether imposing TRQs on MPCs would have affected farm prices at that time. Market prices for dairy products have since moved above support levels.
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Proposed Import Restrictions on Milk Protein Concentrates (MPCs)

Low farm milk prices and declining dairy farm incomes in 2009 renewed congressional interest in imposing new import barriers on milk protein concentrates (MPCs), which generally include casein, the main protein found in milk, and caseinates, a soluble form of casein. MPCs are derived from raw milk and are used in a variety of food products, animal feed, and industrial products. Currently, U.S. imports of MPCs have limited or no trade restrictions while many other dairy product imports are restricted by tariff-rate quotas. Advocates of stricter import controls on MPCs say they would prevent the unlimited importation of milk protein, which would encourage the use of domestically produced protein and raise milk prices for dairy farmers. Opponents respond that the prospective move would increase their costs and result in higher retail food prices. Major foreign suppliers of MPCs to the U.S. market would likely seek compensation under World Trade Organization (WTO) rules for new U.S. restrictions on MPC imports.

Concerns about MPC imports have periodically surfaced since import levels rose sharply in the late 1990s. At that time, the U.S. price of nonfat dry milk, which competes on some level with MPC as a protein ingredient, was above the price for milk proteins in the international market, making the U.S. market an attractive destination. When the world and domestic prices began to converge in 2001, MPC imports dropped off significantly and have since remained at or below peak levels reached in 2000.

Milk Protein Concentrates

Milk is comprised mostly of water, measured at 87.4% of total weight. The remaining 12.6% is called “milk solids,” which is split four ways: fat (3.7% of total weight), protein (3.4%), lactose or sugar (4.8%), and minerals (0.7%).

Milk protein is of two basic types: casein (2.8% of total weight or 82% of total protein) and whey protein (lactalbumin) (0.6% of total weight or 18% of total protein). Casein is extracted from milk by injecting a certain enzyme or acid into skim milk. Historically, casein was used in both industrial applications such as for glue and paper coatings, and in foods, mainly as an ingredient for “nondairy foods” such as imitation cheese, coffee creamers, and margarine. Whey protein is found in liquid whey, which is a by-product of the cheese manufacturing process that must be further processed to retrieve the protein. Whey protein is also used in a variety of food products.

A “milk protein concentrate” (MPC) contains both casein and whey protein, and is often identified by its protein content, such as MPC42 for a product with 42% protein. MPCs are manufactured by ultrafiltration (use of membranes to separate larger molecules from smaller molecules in skim milk), blending (combinations of two or more products, such as skim milk powder and casein), or co-precipitation (a procedure similar to casein extraction).

1 Caseinates are used mostly for specialty nutrition products such as ready-to-drink beverages, drink powders, power bars, and other forms of sports and medical nutrition applications.


Proposed Import Restrictions on Milk Protein Concentrates (MPCs)

Protein concentrates have wide-ranging applications in the food manufacturing industry. Products that contain protein concentrates include infant formula, processed cheese products, imitation cheese, cultured products, frozen desserts, and specialty sports and medical nutrition products. Various protein levels are used in different products: MPC42-MPC56 are generally used in non-standardized cheeses (e.g., brie, ricotta), while MPC70-MPC85 are used in sports drinks and nutritional supplements. MPC90 is used in lactose-free or sugar-free products. Aside from the level of protein, some food manufacturers cite better “functionality” for MPC as an ingredient compared with nonfat dry milk (approximately 35% protein). Some typical functional characteristics include solubility, viscosity, water-binding, whipping and foaming, gelling, and heat stability. Also, processors favor MPC where exact product composition is important or where lactose (present in nonfat dry milk) is not needed or wanted.

The United States produces very little casein or milk protein concentrates. Some dairy economists suggest that the federal dairy policies, particularly the Dairy Product Price Support program, have encouraged the production of nonfat dry milk (NDM) at the expense of milk protein concentrate or casein by assuring a buyer (i.e., the government) for NDM. Producers and others counter that foreign subsidies for exports of dairy products have at times limited U.S. production of protein products.

U.S. Dairy Imports

U.S. imports of dairy products were valued at just over $3 billion in 2008 as measured by the USDA’s Foreign Agricultural Service (Table 1), with cheese accounting for the largest share at 38%. MPCs and casein/caseinates combined represented 35% of total import value. The United States also imports butter, lactose, and a variety of other dairy products such as chocolate milk drinks, pudding, and milk components for food manufacturing.

Constraints on dairy product imports are affected by import barriers (see “Import Barriers”), which are needed to maintain the integrity of the domestic dairy program. The U.S. dairy program supports prices of dairy products and pays farmers subsidies when milk prices decline below certain levels. Unlimited market access would leave open the potential for import surges that could result in large purchases by the federal government under the price support program and/or lower farm prices that would drive up payments under the Milk Income Loss Contract (MILC) program.

Dairy imports are modest relative to domestic production. The U.S. Department of Agriculture (USDA) estimated import quantities during 2000-2004 at about 3% of milk production, driven primarily by cheese imports. More recent figures indicate little change since then.

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4 For more information on U.S. dairy programs, how they work together, and the current market situation, see CRS Report R40205, Dairy Market and Policy Issues, by Dennis A. Shields.
### Table 1. U.S. Dairy Imports
(calendar year in millions of dollars)

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cheese</td>
<td>982</td>
<td>1,007</td>
<td>1,029</td>
<td>1,107</td>
<td>1,168</td>
<td>1,050</td>
</tr>
<tr>
<td>Casein/Caseinates</td>
<td>497</td>
<td>589</td>
<td>497</td>
<td>575</td>
<td>758</td>
<td>680</td>
</tr>
<tr>
<td>Milk protein conc.</td>
<td>184</td>
<td>209</td>
<td>236</td>
<td>241</td>
<td>318</td>
<td>269</td>
</tr>
<tr>
<td>Butter</td>
<td>51</td>
<td>47</td>
<td>39</td>
<td>41</td>
<td>47</td>
<td>33</td>
</tr>
<tr>
<td>Lactose</td>
<td>6</td>
<td>5</td>
<td>9</td>
<td>14</td>
<td>14</td>
<td>12</td>
</tr>
<tr>
<td>Other</td>
<td>611</td>
<td>736</td>
<td>794</td>
<td>825</td>
<td>747</td>
<td>688</td>
</tr>
<tr>
<td>Total</td>
<td>2,331</td>
<td>2,593</td>
<td>2,604</td>
<td>2,803</td>
<td>3,052</td>
<td>2,732</td>
</tr>
</tbody>
</table>


- a. Harmonized Tariff Schedule (HTS) 3501.10.50 (casein) and HTS 3501.90.60 (caseinates).
- b. HTS 3501.10.10 (90% protein) and HTS 0404.90.10.

### Imports of MPCs and Casein

During most of the last decade, total U.S. imports of MPCs and casein/caseinates have hovered around 150,000 metric tons or less (Figure 1). Since the sharp rise in the late 1990s, there has been no discernible import trend, with a sharp decline in 2009 (reportedly related to weak demand) following a rise in 2008. Primary U.S. suppliers include New Zealand, Australia, and the European Union (Figure 2 and Figure 3).

**Figure 1. U.S. Imports of Milk Protein Concentrates and Casein/Caseinates**

![Figure 1. U.S. Imports of Milk Protein Concentrates and Casein/Caseinates](image)

Source: USDA, Foreign Agricultural Service.

Note: 2009 figures are annualized based on January-November data.
Import Barriers

Section 22 Quotas and TRQs

Until 1995, imports of almost all dairy products (butter, cheese, dry milk) were subject to section 22 import quotas. Section 22 of the Agricultural Adjustment Act of 1933 (7 U.S.C. 624(f)) requires the President to impose quantitative limitations or fees on imports that the President finds are being, or are practically certain to be, imported under such conditions and in such quantities as to render or tend to render ineffective, or materially interfere with, any USDA domestic support or stabilization program. Dairy products that were not covered by section 22 quotas included casein, caseinates, whey, and soft-ripened cow’s milk cheese (e.g., brie).

The 1995 WTO Uruguay Round Agreement on Agriculture converted section 22 quotas (including dairy product quotas) into tariff rate quotas (TRQs).7 (The United States also agreed to progressive reductions in the quantity and value of export subsidies under the Dairy Export Incentive Program or DEIP.)8 Importers of dairy products under the low tariff in a TRQ must apply for a license from USDA. No license is required for over-quota imports which are subject to a higher tariff. Since MPCs and casein imports had not been restricted under section 22, they were not subject to TRQs, nor were they subject to licensing requirements. Legislation to implement the WTO Uruguay Round Agriculture Agreement (P.L. 103-465) amended section 22

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7 A tariff rate quota or TRQ imposes a low import duty on quantities within a quota while quantities above the quota are charged higher duty rates.

8 See CRS Report R40584, Implications of Reactivating the Dairy Export Incentive Program (DEIP), by Dennis A. Shields and Charles E. Hanrahan.
to prohibit the application of quantitative import limitations or fees on products from other WTO members.

Imports of MPCs are classified under the Harmonized Tariff Schedule of the United States (HTS) under subheadings 0404.90.10 for imports with a protein concentration of 40% to 90% and under 3501.10.10 for imports with a protein concentration of 90% or more.\(^9\) Imports of casein and caseinates are classified under subheadings 3501.10.50 and 3501.90.60. MPCs are subject to a very low tariff of 0.37 cents per kilogram. Imports of casein (under 3501.10.50) are duty free; other casein derivatives have a tariff of 0.37 cents per kilogram.

**Previous Efforts to Reclassify MPCs**

During the early 2000s, milk producers and their supporters in Congress tried to change the tariff treatment of MPCs by petitioning the U.S. Customs Service to change the tariff classification of MPCs and by introducing legislation that would have established TRQs for MPCs.

In 2002, the U.S. Customs Service (now Customs and Border Protection (CBP)) received a petition from the National Milk Producers Federation (NMPF) to review the tariff classification of MPCs and to change the classification from a non-quota to a quota classification.\(^10\) In its petition, the NMPF contended that dairy products classified under HTS 0404.90.10 did not meet the statutory definition of MPCs and were therefore not classifiable under that subhead of the HTS. They should instead, according to NMPF, be classified under heading 0402 which covers “milk and cream, concentrated or containing added sugar or other sweetening matter.” If so classified, MPCs would become subject to TRQs and also in many cases would require import licenses.

NMPF contended that to be properly classified as MPCs, a product must have been produced using the process of ultrafiltration and must contain casein and lactalbumin (whey protein) in the same proportion as found in milk. CBP responded, however, that the statutory language (Additional U.S. Note 13 to Chapter 4 of the HTS) refers to “any complete milk protein (casein plus lactalbumin) concentrate that is 40% or more protein by weight.”\(^11\) Congress in the Additional Note had not specified a manufacturing process nor had it prohibited any blend or mix that met the 40% protein content by weight criterion. Thus, according to CBP, MPCs imported under 0404.90.10 met the statutory conditions provided in Additional Note 13 and were properly classified.

During early 2003, bills were introduced in the 108\(^{th}\) Congress (H.R. 1160, S. 560) that would have accomplished the same purposes as legislation that has been introduced in the 111\(^{th}\) Congress (see “New Legislative Import Restrictions Proposed”). Both H.R. 1160 and S. 560 languished in committee.

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\(^10\) The U.S. Customs Service decision concerning the tariff classification of milk protein concentrates can be viewed at http://www.cbp.gov/ImageCache/cgov/content/laws/customs_5fbulletins_5fand_5fdecisions/2003/vol37_5f07302003_5fno31/37genno31_2epdf/v1/37genno31.pdf.

\(^11\) Notes to Chapter 4 of the HTS are at http://www.fas.usda.gov/gainfiles/200702/146280171.pdf. Click on “Chapter 4”, then on “Notes” to view Additional Note 13.
New Legislative Import Restrictions Proposed

The Milk Import Tariff Equity Act (S. 1542) was introduced on July 30, 2009, to limit imports of MPCs, casein, and caseinates. A companion bill was introduced in the House (H.R. 3674) on September 29, 2009, with slight differences in aggregate quantities of permitted MPCs under the new tariff designations.

S. 1542 would introduce two separate TRQs. The first would be for MPCs classified under HTS subheading 0404.90.10 for imports with a protein concentration of 40% to 90%. Annual imports in excess of 18,488 metric tons would be assessed a duty of $1.56/kg ($0.708/lb.). The second TRQ would be for the combined imports of three products: milk protein concentrate (90% protein), casein, and caseinates (HTS 3501.10.10, 3501.10.50, and 3501.90.60, respectively). Annual imports in excess of 55,477 metric tons would be assessed a duty of $2.16/kg ($0.98/lb.). The duty on import quantities below each quota would remain at the current low level ($0.0037/kg or $0.0017/lb.), except for imports under HTS 3501.10.50, which would remain free.

More than half the annual trade in MPCs and casein/caseinates would be affected by the new, higher duties. Imports under HTS 0404.90.10 averaged 51,000 metric tons during 2006-2008 compared with 18,499 metric tons under the proposed TRQ. Similarly, imports of casein products averaged 108,000 metric tons compared with 55,477 metric tons under the proposed TRQ.

Trade Policy Implications

Enactment of the proposed legislation likely would entail the United States’ entering into compensation negotiations with WTO member countries that are major suppliers of MPCs to the U.S. market. S. 1542 authorizes the President to enter into such negotiations (Section 3). Article XXVIII of the original General Agreement on Tariffs and Trade (GATT 1947) provides the mechanism for WTO member countries to negotiate compensation when a tariff concession (in this case the current low tariff for MPC imports) is modified or withdrawn. Article XXVIII allows member countries to increase tariffs or set new TRQs, but in exchange for withdrawing or modifying a concession compensation must be provided to affected member countries. Compensation does not mean a monetary payment; it means, in this case, that the United States is supposed to offer a benefit or concession such as a tariff reduction which is equivalent to the benefits which the United States has withdrawn or modified.

Formulas for determining the amount of compensation are provided in the Understanding on the Interpretation of Article XXVIII that is part of the 1994 WTO Uruguay Round Agreements (GATT 1994). The Understanding on Article XXVIII provides that when an unlimited tariff concession is replaced by a TRQ, the amount of compensation provided should exceed the amount of the trade actually affected by the modification. The basis for the calculation of compensation is the amount by which future trade prospects exceed the level of the quota. The

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12 Article XXVIII of the GATT 1947 can be viewed at http://www.wto.org/english/docs_e/legal_e/gatt47_02_e.htm#articleXXVIII.

calculation spelled out in the Understanding says that the calculation of future trade prospects should be based on the greater of:

(a) the average annual trade in the most recent representative three-year period, increased by the average annual growth rate of imports in that same period, or by 10%, whichever is the greater, or

(b) trade in the most recent year increased by 10%.

Based on these formulas and recent trade data, the aggregate amount of compensation for which the United States might be liable could be an estimated $500 million.\(^\text{14}\) Compensation could be in the form of tariff reductions on other products or other benefits.

Article XXVIII negotiations would be held on a bilateral basis. That would mean that negotiations would be conducted with such principle suppliers as New Zealand, the European Union, India, and Australia. A major issue would be quota allocation.\(^\text{15}\) Current quotas for most dairy products are distributed on an historical basis, while importers must apply for licenses to import dairy products.

### Canadian Article XXVIII Negotiations on MPCs

On February 7, 2006, the Canadian Minister of Agriculture announced that Canada would be initiating negotiations under GATT Article XXVIII to restrict imports of MPCs.\(^\text{16}\) This trade policy move came after a year of work by a Canadian government-initiated technical working group composed of producers and processors failed to reach agreement on a common approach to challenges facing the Canadian dairy industry. Main suppliers of MPCs to the Canadian market are New Zealand and the European Union. It appears, according to USDA's Foreign Agricultural Service, that the Article XXVIII process would not be applicable to Canada’s NAFTA partners (the United States and Mexico).\(^\text{17}\)

The main dairy producer group, Dairy Farmers of Canada (DFC), is the major supporter of the move to restrict Canadian imports of MPCs. Canadian dairy processors, again according to FAS, have worked to restrict the scope of new restrictions to items imported under HTS of Canada Chapter 35, MPCs with a milk protein content equal to or greater than 85% by weight. If import restrictions on MPC were broadened beyond Chapter 35, the expectation among some observers is that Canadian dairy processors would shift operations to the United States.\(^\text{18}\)

The *Canada Gazette* reported that the Article XXVIII negotiations were concluded in June of 2008 and that Canada would include in its tariff schedule a TRQ for MPCs with protein content.

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\(^{14}\) Compensation based on MPC quotas established in S. 1542.

\(^{15}\) Rules for quota allocation are provided in GATT Article XIII.


\(^{17}\) Ibid.

of 85% or more by weight.\textsuperscript{19} Within quota quantities of MPC 85+ will enter free of duty, while over quota amounts will be subject to a 270% ad valorem tariff. The TRQ does not apply to NAFTA countries and other countries with which Canada has free trade agreements.

**Industry Viewpoints**

U.S. milk producers in general support legislation to limit imports of MPCs. The National Milk Producers Federation (NMPF), the largest trade organization representing dairy farmers, supports the proposed legislation “in order to close a loophole in the U.S. dairy sector allowing certain dairy proteins ... to enter the U.S. and disrupt farm-level prices.”\textsuperscript{20} Similarly, the National Farmers Union supports restrictions on MPCs.\textsuperscript{21} Although the NMPF supports the legislation, the organization has stated that imports are not the cause of the economic problem the industry is currently facing and cautions against taking import measures that could harm prospects for U.S. dairy exports.\textsuperscript{22}

The International Dairy Foods Association (IDFA), representing dairy product processors and manufacturers, is adamantly opposed to more restrictions on dairy imports. IDFA is concerned that such a move would increase production costs for food manufacturers, raise prices for consumer products, and put at risk recent gains in U.S. dairy exports. They also argue that domestic production of MPCs is not sufficient to meet demands of food manufacturers, and MPCs are not interchangeable with domestically produced nonfat dry milk.

**Potential Impact on Farm Milk Prices**

The potential price impact of imposing TRQs depends on the level of farm prices relative to the implied level of support under the Dairy Product Price Support Program (DPPSP). In general, if dairy product prices (and hence, farm milk prices) are low relative to USDA’s purchase price levels, resulting in USDA purchases of dairy products from manufacturers, the impact of additional imports falls primarily on the dairy program (i.e., higher government purchases and program costs) rather than on farm prices.\textsuperscript{23} Hence, stricter import controls could result in reduced government purchases of dairy products (and lower outlays). Conversely, if product prices are well above DPPSP purchase prices and the program becomes inactive, the impact shifts to the market.

\textsuperscript{19} Canada Gazette, Part II, Official Regulations, “Order Amending the Import Control List”, September 5, 2008, viewed at http://www.gazette.gc.ca/rp-pr/p2/2008/2008-09-17/html/sor-dors282-eng.html. We have been unable to determine the amount of compensation provided by Canada to major suppliers.


USDA purchased surplus dairy products from October 2008 to October 2009, primarily nonfat dry milk, with the pace slowing considerably in late summer 2009. This leaves open the question whether imposing TRQs on MPCs and caseins/caseinates would have affected farm prices. Dairy product prices have since moved above support levels.

To the extent product prices remain above purchase prices in the DPPSP, the magnitude of the impact on farm milk prices would depend on: (a) the amount of product not imported because of the TRQ, and (b) how this quantity (in milk equivalent) relates to overall U.S. milk production. Using the proposed TRQ levels and average imports from 2006-2008, the amount of over-quota imports would total 85,000 metric tons.\(^{24}\) Converted to farm milk equivalent, the over-quota imports would equate to approximately 1.2 billion pounds of farm milk or about 0.7% of average U.S. milk production during 2006-2008.\(^{25}\) By itself, this amount of milk equivalent, if made unavailable to the U.S. market, would have a relatively small effect on average U.S. farm milk prices. However, some view it as part of a larger set of policies that would help address the current financial situation for U.S. dairy farmers.

**Author Contact Information**

Dennis A. Shields  
Analyst in Agricultural Policy  
dshields@crs.loc.gov, 7-9051

Charles E. Hanrahan  
Senior Specialist in Agricultural Policy  
chanrahan@crs.loc.gov, 7-7235

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\(^{24}\) 85,000 metric tons = 159,000 (combined average imports) – 74,000 (combined TRQ quota amounts), all figures are rounded.

\(^{25}\) The calculation uses a milk-equivalent conversion factor of 6.49 (total solids basis); i.e., for every 1 lb. of casein, 6.49 lbs. of milk are required.