

# WEIGHING THE CURDS

How to Differentiate  
Nutritious Brands from  
Overly Processed  
Concoctions



**CORNUCOPIA**  
INSTITUTE

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The Cornucopia Institute is chartered as a tax-exempt, public charity focusing on research and education. Cornucopia aims to empower organic producers, consumers, and wholesale buyers to make discerning marketplace decisions, protecting the credibility of the organic food and farming movement and the value it delivers to society.

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Market analysts forecast that the cottage cheese market will grow by almost 10% between 2018 and 2022.

As consumer packaged goods companies maneuver to capitalize on this upward trend, an increasing number and variety of cottage cheese products are making their way onto grocery store shelves.

## INTRODUCTION: COTTAGE CHEESE AS A GROWING MARKET FORCE

**COTTAGE CHEESE IS EXPERIENCING** a resurgence in popularity and, consequently, is becoming a more significant part of the dairy sector. This trend in the marketplace brings new challenges for consumers.

This report addresses:

- The history, decline, and resurgence of cottage cheese sales;
- Why USDA certified organic cottage cheese is the better choice for consumers;
- The health benefits of cottage cheese in a dairy-inclusive diet; and,
- The variety of ingredients found in cottage cheese and how to identify nutritionally superior products.

Cottage cheese was a dairy staple in households for decades, reaching its peak in the early 1970s. At that time, the average American ate five pounds of cottage cheese per year.<sup>1</sup>

Since then, consumption of cottage cheese has halved; but recent market data suggests that this once beloved dairy delight is primed for a global comeback.

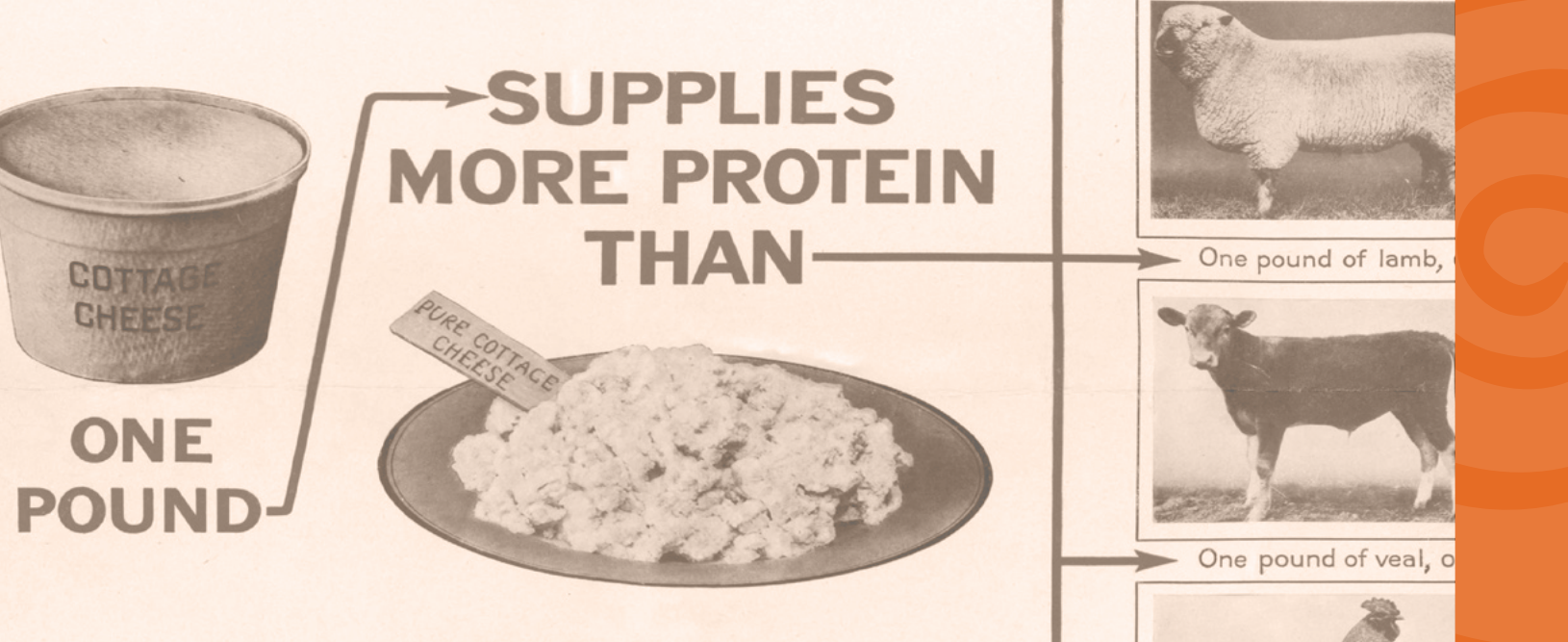
Market analysts forecast that the cottage cheese market will grow by almost 10% between 2018 and 2022.<sup>2</sup> As consumer packaged goods companies maneuver to capitalize on this upward trend, an increasing number and variety of cottage cheese products are making their way onto grocery store shelves.

Many cottage cheese products on the shelves today have been converted to junk food with the addition of processed ingredients, including starches, gums, thickeners, and added sugar.

Cornucopia's report and accompanying **scorecard** will help consumers identify the healthful, protein-packed, calcium-rich curds akin to the cottage cheese which has been consumed for centuries.

Our research findings show that the best choice is always USDA certified organic cottage cheese, which consists almost entirely of the wholesome, highly nutritious ingredient from which it was derived: organic milk.





## HISTORY OF COTTAGE CHEESE IN THE UNITED STATES

**COTTAGE CHEESE HAS BEEN AROUND** for generations. It is generally thought that the “cottage” descriptor originated in the 1800s, when cooks in country homes (referred to as cottages) fermented milk left over after making butter into this mild cheese. Cottage cheese was also derived from “soured” milk as a way of preserving and upcycling the product.<sup>3</sup>

During the First World War, the Food and Drug Administration (FDA) and the United States Department of Agriculture (USDA) encouraged Americans to cut back on meat, which was in demand for soldiers overseas.

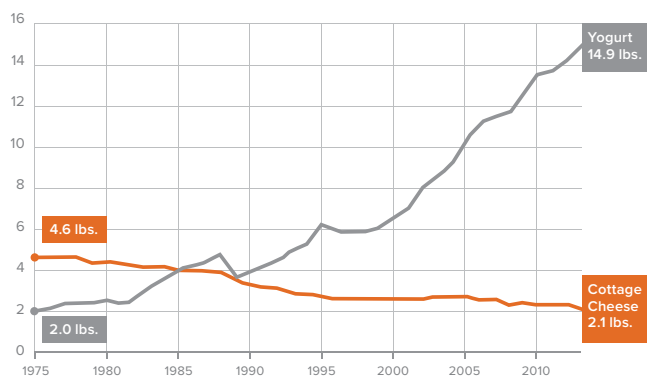
The USDA created a poster that read: “Eat more cottage cheese, you’ll need less meat,” noting that a pound of cottage cheese supplied more protein than a pound of beef, pork, or poultry.<sup>4</sup>

Americans were also encouraged to adopt “Meatless Tuesdays” and to substitute cheese as a protein source.

During World War II, the Franklin Delano Roosevelt administration instituted food rations to preserve processed and canned foods for shipping to the military. Because hard cheeses were able to withstand international shipping, they were also rationed. Due to its perishable nature, cottage cheese was exempt from rationing and widely consumed at home.<sup>5</sup>

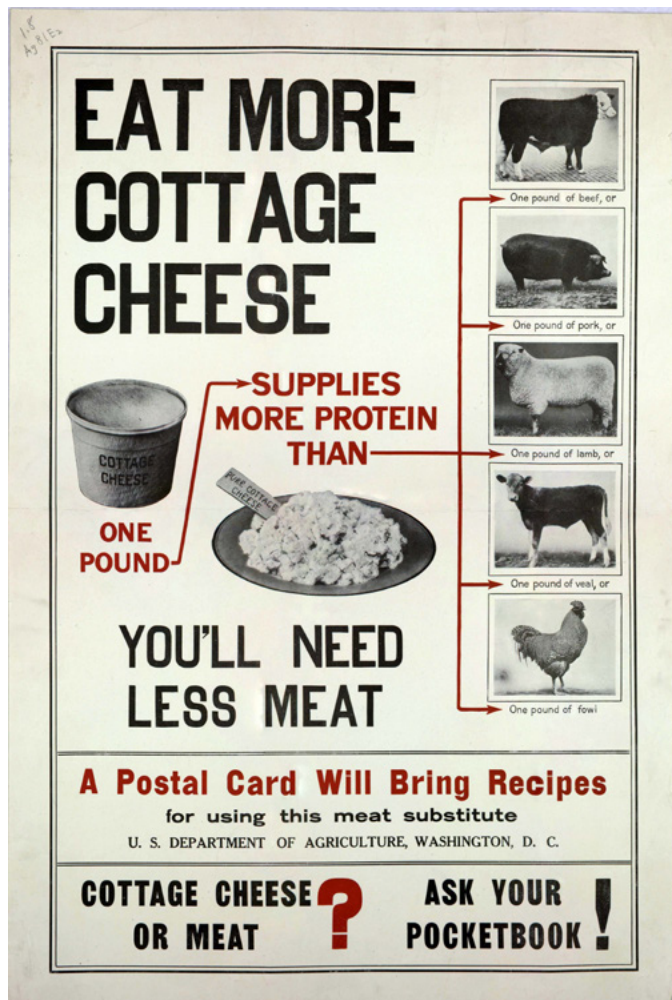
By the 1950s, cottage cheese was hailed as a diet and health food, and, in 1970, the average U.S. consumer was eating a little over five pounds per year.<sup>6</sup> As large-scale food manufacturers took industrial shortcuts in cottage cheese production, which often altered the food’s familiar flavor, its appeal waned.<sup>7</sup>

**HOW YOGURT ECLIPSED COTTAGE CHEESE OVER 40 YEARS**  
Pounds consumed annually per capita (1975-2013)



Source: USDA National Agricultural Statistics Service and Eliza Barclay and Alyson Hurt/NPR

At the same time, consumers began to gravitate toward another darling of the modern processed dairy industry: yogurt. By the 1980s, yogurt was mainstream, with a seemingly endless variety of flavored and sweetened options available. Yogurt boasted \$7.5 billion in sales in 2017, a 2.7% decline over the previous year. The decline has been attributed to oversaturation of the market and consumer confusion over the myriad choices.<sup>8</sup>



U.S. Department of Agriculture. "Eat More Cottage Cheese." [Special Collections, USDA National Agricultural Library.](#)

New lines of cottage cheese, replete with fruit, nuts, and a variety of flavorings, are now elbowing their way into the dairy case.<sup>9</sup> Between 2015 and 2016, cottage cheese sales rose by 1.2%.<sup>10</sup> Although this accounted for only 2% of total dairy sales, market forecasters suggest cottage cheese sales will continue to grow at 9.73% through 2022.<sup>11</sup>

## ADDED FLAVORS AND OTHER MARKETING CHANGES

Food manufacturers are now betting on cottage cheese. Dean Foods recently announced a 2019 advertising campaign that will target millennials with what it presents as innovative, not your grandma's versions of traditional cottage cheese.<sup>12</sup>

Companies have added sweet and savory "mix-ins" to cottage cheese and changed its texture by manufacturing "smooth" or smaller-curd varieties.<sup>13</sup>

As an increasing number of cottage cheese products hit grocery store shelves, it's more important than ever to scrutinize ingredient labels, nutrition panels, and processing techniques to decipher between nutritious foods and additive-laden, overly processed concoctions.

Giant food companies, such as those led by General Mills (Yoplait) and Dannon, have already effectively transformed yogurt into a "junk food." Cottage cheese faces the same fate at the hands of manufacturers keen on capitalizing on this largely untapped, but growing, market.

Large cottage cheese manufacturers are now taking a cue from yogurt's modern success.<sup>14</sup> Like the yogurt of old, cottage cheese has mainly been sold in multi-serve containers. Those tubs lack the convenience of on-the-go packaging, but they remain the more environmentally friendly option. Marketers are now repackaging and rebranding their cottage cheese to garner wider market appeal.

In 2017, Breakstone's, one of the largest manufacturers of cottage cheese, introduced single-serve packs with fruit toppings. These flavored options range from "mango habanero" to "honey vanilla" and bear little resemblance to traditional cottage cheese.

Muuna, a wholly owned subsidiary of Israel's biggest food manufacturer, Truva (owned by China's Bright food), has moved into the American market and is also offering its conventional products in single-serve packaging.<sup>15</sup>

Good Culture, a company based in Irvine, California, manufactures conventional and organic cottage cheese in multiple flavors, such as "strawberry chia" and "kalamata olive," which are sold in 5.3 oz. cups. An investment arm of General Mills, 301, Inc., provided strategic funding for the company in 2016 to fund sales and distribution strategies.<sup>16</sup>

Food companies marketing highly processed products, often in "convenience packaging," frequently add carrageenan (a known digestive irritant), gums, and sugar to their products. Numerous cottage cheese products contain these additives, compromising the health benefits of an otherwise highly nutritious food.

As an increasing number of cottage cheese products hit grocery store shelves, it's more important than ever to scrutinize ingredient labels, nutrition panels, and processing techniques to decipher between nutritious foods and additive-laden, overly processed concoctions.





## 4 REASONS WHY ORGANIC COTTAGE CHEESE IS THE RIGHT CHOICE FOR YOUR FAMILY

### ALWAYS ORGANIC

Organic cottage cheese is superior to conventional cottage cheese. Here's why.

#### 1. NO GENETICALLY MODIFIED ORGANISMS

USDA certified organic regulations expressly prohibit ingredients from genetically modified organisms (GMO).<sup>17</sup> In addition, the feed given organic dairy cows who provide the milk used to make cottage cheese is required to be non-GMO.

The USDA reports that approximately 90% of corn and soybeans in the U.S. are genetically engineered.<sup>18</sup> The vast majority of cows used in conventional dairy production in the U.S. are fed GMO grain.<sup>19</sup>

Many GMO crops, like those fed to most dairy cows in conventional production, have been engineered to be glyphosate resistant. Glyphosate, the primary active ingredient in Roundup, is manufactured by the chemical giant Monsanto, now owned by Bayer. The herbicide is routinely applied over vast acres of cropland to kill weeds while leaving the crops intact.

The hazards of glyphosate exposure continue to mount, although many corporate-sponsored studies find no health risks of ingesting residues within Environmental Protection Agency established tolerance levels.<sup>20</sup>

In 2015, the International Agency for Research on Cancer classified glyphosate as a “probable human carcinogen” after studies linked it to non-Hodgkin’s lymphoma.<sup>21</sup> In August of 2018, a California jury awarded \$289 million to a worker who developed cancer after being repeatedly exposed to the chemical during his years as a pest-control manager.<sup>22</sup>

### GMOS MAY BE HIDING IN CONVENTIONAL INGREDIENTS

Many conventional cottage cheese products contain ingredients derived from corn, which is likely genetically modified. These ingredients include modified corn starch and modified food starch.

Both starches are made by treating the native starch to change its properties, depending on its desired application in the final product. It is used to act as a binding, thickening, or gelling agent. Modified food starch can be derived from corn, potato, tapioca, wheat, or other starches. In the U.S., if modified food starch is made from wheat and added to an FDA regulated food it must be listed as “modified wheat starch” or similar wording that specifies its wheat-based origin.<sup>23</sup>

Although the descriptor “modified” does not refer to genetic modification, if the modified food starch is found in a conventional product processed in the U.S. and is made from corn, it is likely genetically modified. Because “food” is a generic term, it’s impossible to know the origin

## MORE THAN MILK: WHAT'S HIDING IN YOUR BOWL

Milk	Vitamin A	Guar Gum	Fruit and Vegetable Juice Concentrate	Sugar	Black Carrot Juice and Purple Carrot Juice (Color)
Cream	Palmitate	Citric Acid	Potassium Sorbate	Modified Food Starch	Caramel Color
Salt	Rennet	Enzymes	Calcium Phosphate	Modified Corn Starch	Annatto
Carrageenan	Carbon Dioxide	Cane Sugar	Artificial Color	Carrageenan	Vanilla Bean Seed
Tri-Calcium Phosphate	Cultures	Flavor	Artificial Flavor	Maltodextrin	
Locust Bean Gum	Live and Active Cultures	Pectin	Natural Flavor	Vitamin D3	
Citric Acid	Monoglycerides & Dicyclerides	Lemon Juice Concentrate			

of the starch or whether it was genetically modified—another reason to always choose certified organic.

## 2. NO RBGH

Recombinant bovine growth hormone (rbGH) is commonly injected into conventional dairy cows to increase milk production. Using growth hormones is explicitly banned in organic production.<sup>24</sup>

Numerous studies have shown increased growth hormones in milk from cows treated with rbGH and a corresponding risk of cancer in humans (see Cornucopia's Yogurt Report, *Culture Wars*, for details).<sup>25</sup>

Choosing organic cottage cheese assures that dairy cows were not dosed with synthetic growth hormones.

## 3. ORGANIC DAIRY IS MORE NUTRITIOUS

The organic standards require that organic dairy cows be on pasture during the grazing season and obtain a minimum of 30% of their dry matter intake from pasture.<sup>26</sup> Compared with dairy cows raised in conventional confinement, organic dairy cows have a better diet, which affects the nutritional quality of the milk they produce (see Cornucopia's Dairy Report, *The Industrialization of Organic Dairy*, for details<sup>27</sup>).

In late 2016, one of the most comprehensive reviews of existing research on organic food and production practices was published.<sup>28</sup> The review, commissioned by the European Parliament, confirmed that milk produced by animals raised under organic production methods, including grazing, has a higher content of omega-3 fatty acids. Researchers have found 50% higher content of omega-3 fatty acids in grass-fed cow's milk.<sup>29</sup> (See Cornucopia's Dairy Report for details on how production methods impact milk's health benefits).<sup>30</sup>

Both omega-3 and omega-6 fatty acids are essential for human health, but excessive levels of omega-6 and

low levels of omega-3 are unhealthy.<sup>31</sup> Most Americans consume insufficient amounts of omega-3 fats.<sup>32</sup>

Grass-fed dairy is also a good source of conjugated linoleic acid (CLA), a fatty acid that has been linked to a range of health benefits, including reduced risk of cardiovascular disease, certain cancers, and obesity.<sup>33</sup> A recent study found that organic milk contains 40% more CLA than conventionally produced milk.<sup>34</sup>

## 4. NO CONVENTIONAL PESTICIDES USED ON FRUIT AND OTHER STIR-IN ADDITIVES

Conventional cottage cheese that contains fruit and other mix-in additives, like nuts, likely contains residues of synthetic, toxic pesticides not allowed in organic production.

Studies have shown that organically produced crops have fewer detectable pesticides, some of which mimic hormones in the body.<sup>35</sup> Cumulative exposure to chemicals that mimic hormones in the body can have catastrophic effects on human health.<sup>36</sup>

When buying cottage cheese with fruit or other stir-in ingredients, choose organic to ensure the produce was grown without the use of toxic pesticides.

## INGREDIENTS TO AVOID

### 1. CARRAGEENAN

Carrageenan is a seaweed extract that food manufacturers add to many processed foods. It creates a fatty "mouthfeel" in products such as low-fat or non-fat dairy and plant-based dairy substitutes (e.g. soy and coconut beverages). Carrageenan adds no nutritional value or flavor to foods or beverages. Since carrageenan is derived from seaweed, some consumers assume it is healthy. On the contrary, ingestion of carrageenan carries documented health risks.<sup>37</sup>



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Due in part to consumer pressure led by Cornucopia, the National Organic Standards Board voted in 2016 to prohibit carrageenan in foods bearing the USDA organic label. The USDA chose to ignore the NOSB and reapprove the use of carrageenan in organic foods in April of 2018.

The unique chemical structure of carrageenan triggers an immune response in the body that leads to inflammation. It is a known intestinal irritant and can cause ulcers, ulcerative colitis, and irritable bowel syndrome (see Cornucopia's Carrageenan Report, *Carrageenan: New Studies Reinforce Link to Inflammation, Cancer and Diabetes*, for details).<sup>38, 39</sup>

Due in part to consumer pressure led by Cornucopia, the National Organic Standards Board voted in 2016 to prohibit carrageenan in foods bearing the USDA organic label.<sup>40</sup> The USDA chose to ignore the NOSB and reapprove the use of carrageenan in organic foods in April of 2018.

Many organic brands have voluntarily eliminated the substance from their product formulations, however, as a result of consumer demand. Shoppers can use Cornucopia's Cottage Cheese Scorecard to find out which brands do not use carrageenan in their products.

## 2. NON-ORGANIC EMULSIFIERS AND GUMS

Ingredients including guar gum, acacia gum, xanthan gum, and soy lecithin are often added to enhance palatability and give cottage cheese a creamier, more velvety "mouthfeel." They also serve as an emulsifier to prevent separation. Some individuals may experience allergic reactions and digestive problems as a result of these unnecessary additives.

Xanthan gum is a thickening agent made by fermenting a yeast with corn or another sugar source. It has been linked to digestive problems and colitis.<sup>41</sup>

## 3. ADDED FLAVORS AND COLORS

Flavors and colors often are added to improve the taste and appearance of products that have been highly processed. Artificial flavors can consist of any number of 2,500 chemically defined flavoring substances considered safe for use by the Food and Drug Administration. Synthetic colors and flavors can be a health risk and are prohibited in organic food (see Cornucopia's Snack Bars Report, *Raising the Bar*, for more information).<sup>42</sup>

## 4. A LENGTHY INGREDIENT LIST

Some brands of cottage cheese are highly processed. Milk is the only ingredient required to make wholesome nutritious cottage cheese. Consumers should use caution when they see a long ingredient list or ingredients they cannot identify. Here are just a few to be on the lookout for:

### ■ MALTODEXTRIN

Maltodextrin is a starch found in numerous cottage cheese products, commonly derived from corn or wheat, but also made from rice, potatoes, and tapioca.

The starch is processed to create a water-soluble white powder which is used as a stabilizer, sweetener, and thickener in many packaged foods. The U.S. Food and Drug Administration lists maltodextrin as a GRAS (Generally Recognized as Safe) food additive.

Like modified food starch, most maltodextrin is genetically modified. Since all ingredients in certified organic products must be GMO-free, maltodextrin in organic cottage cheese must be made from non-GMO corn or wheat.<sup>43</sup>

Some researchers have also raised concerns about maltodextrin's high-glycemic index. Ingredients with a high glycemic index cause blood sugar to rise quickly. If this process occurs repeatedly over time, a person is at higher risk for insulin resistance and diabetes.<sup>44</sup>

Research has also raised concerns that maltodextrin can change gut bacteria composition, suppress the growth of probiotics, and increase the growth of harmful bacteria that is associated with autoimmune disorders.<sup>45</sup>

### ■ MONOGLYCERIDES AND DIGLYCERIDES

Monoglycerides and diglycerides are commonly added to commercial food products like cottage cheese to prevent mixtures of oils and water from separating, to improve texture, and to extend shelf life.

Mono- and diglycerides may contain trans fats.<sup>46</sup> The consumption of trans fats is linked to an increased risk of heart disease and strokes.<sup>47</sup>

The FDA has taken steps to remove artificial trans fats from foods, including a ban on partially hydrogenated oils, the most common source of trans fats.<sup>48</sup> The ban does not apply to mono and diglycerides because they are classified as emulsifiers, not fats (lipids). Some companies have circumvented the FDA's ban on trans fats by adding monoglycerides and diglycerides to cottage cheese to obtain the qualities they want in their product.

If you see mono- and diglycerides on an ingredient label, it's impossible to know how much trans fat is in the product.

Medical experts contend there are no safe levels of trans-fat consumption.<sup>49</sup>

■ **POLYSORBATE 80**

Polysorbate 80 is a chemical compound that is made in a lab and is available in different grades, each with a different characteristic. Polysorbate 80 can be used as an emulsifier in foods, vitamins, medicines, and vaccines. It is used in some varieties of cottage cheese to retain its creamy texture and prevent separation.

While the FDA considers it safe for human consumption<sup>50</sup>, polysorbate 80 may promote inflammatory bowel diseases such as ulcerative colitis and Crohn's disease.<sup>51</sup>

According to some researchers, "[it] has been hypothesized that emulsifiers, detergent-like molecules that are a

ubiquitous component of processed foods...might be promoting the increase in inflammatory bowel disease observed since the mid-twentieth century."<sup>52</sup>

When fed to rats, polysorbate 80 has caused inflammation, as well as changes in metabolic function and gut bacteria.<sup>53</sup> Animal studies also suggest that polysorbate 80 could cause anaphylactic shock and interfere with the development of reproductive organs.<sup>54</sup>

■ **POTASSIUM SORBATE**

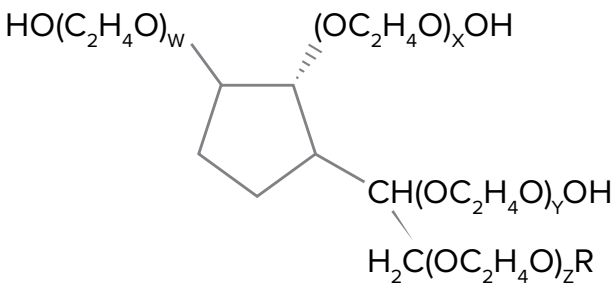
Potassium sorbate is a chemical additive that is used in food and personal care products. It extends the shelf life of foods by halting the growth of yeast, fungi, and mold.

Although the FDA recognizes it as GRAS, some people have reported allergies to potassium sorbate.<sup>55</sup> When you see potassium sorbate on a cottage cheese ingredient label, consider that it is an artificial preservative made from industrial chemicals.

**5. ADDED SWEETENERS**

Flavored cottage cheese may contain added sugar. Consuming large amounts of sugar is associated with cardiovascular disease and type 2 diabetes.<sup>56</sup> The American Heart Association recommends limiting added sugar intake to no more than six teaspoons per day.<sup>57</sup>

Consumers can add the sweetener of their choice in order to better control the level and quality of sweetening.



**PUBLIX BRAND FAT-FREE: IS THIS REALLY COTTAGE CHEESE?**

Thickeners, Preservatives, Colors



**BREAKSTONE'S NON-FAT COTTAGE CHEESE**

Artificial Color, Gums, Natural flavors, and Mono- and Diglycerides







## NUTRITIONAL PROFILE

**COTTAGE CHEESE IS RICH IN PROTEIN**, vitamins, and minerals, all of which are vital for human health.<sup>58</sup>

Nutrition needs vary from person to person, based on gender, age, level of activity, specific health circumstances, and dietary choices. Cornucopia recommends consulting with a medical professional for individualized nutrition plans. For those who eat dairy products, there may be health benefits to eating cottage cheese.

### PACKED WITH PROTEIN

Cottage cheese is high in dietary protein, which is essential for muscle growth and repair.<sup>59</sup> One cup of cottage cheese can pack up to 25 grams of protein, which accounts for over 70% of its calories.<sup>60</sup>

The Recommended Dietary Allowance (RDA) is .36 grams of protein per pound of body weight (.8 grams per kilogram).<sup>61</sup> This averages out to 56 grams per day for men and 46 grams per day for women, although individual protein needs vary based on factors such as activity level and age.<sup>62</sup>

Cottage cheese has long been popular with many fitness enthusiasts and athletes due to its high content of casein protein. Casein, a type of protein found in abundance in cottage cheese, is slow-digesting, meaning it feeds cells over a long period of time, and is thought to reduce muscle breakdown.<sup>63</sup>

Foods high in protein, like cottage cheese, also help eaters feel full longer by controlling the level of the hunger hormone, ghrelin.<sup>64</sup>

#### WHAT'S IN 1 CUP OF COTTAGE CHEESE

- Up to 25 grams of protein
- Approximately 24% of daily recommended B12 intake
- Roughly 30% of the recommended daily intake of selenium

### DAIRY FAT IS GOOD FAT

The fats in cottage cheese, if not stripped out in the low-fat and no-fat varieties, are high-quality saturated and unsaturated fats. Contrary to propaganda disseminated by the sugar industry for years,<sup>65</sup> new scientific studies have found that whole-fat dairy is not associated with cardiovascular disease and stroke.<sup>66</sup>

Not only does emerging research show that full-fat foods are heart-healthy, researchers are also finding that refined sugar in processed foods, not fat, is the culprit in many chronic health problems, such as diabetes.<sup>67</sup>

A study by Tufts University found that, compared to those who eat the least dietary fat, people who eat the most dietary fat have a 46% lower risk of developing Type 2 diabetes.<sup>68</sup> Because the fat in dairy delays the absorption of milk sugar, blood sugar rises more slowly without a corresponding spike in insulin. An excessive amount of circulating insulin leads to insulin resistance, which can ultimately lead to the development of diabetes.



Recent research published in The Journal of Clinical Nutrition also found that consumption of full-fat cheese raises healthy HDL cholesterol levels better than low-fat varieties.<sup>69</sup> Healthy HDL levels are associated with a decreased risk of heart disease.<sup>70</sup>

A review published in the European Journal of Nutrition found that people who eat full-fat dairy tend to be leaner than those who opt for low-fat versions.<sup>71</sup> In another study of over 18,000 middle-aged women, those who consumed high-fat dairy rather than low-fat dairy displayed a reduced likelihood of obesity in later years.<sup>72</sup>

## BOOSTING BONE HEALTH

Like many dairy products, cottage cheese can be an excellent source of calcium and phosphorus.

Research shows that calcium and phosphorus must work together in proper proportions to be effective for optimal bone health.<sup>73</sup> Most calcium supplements and many calcium-fortified foods do not contain phosphorus, which

is all the more reason to consider whole foods like cottage cheese.

Phosphorus also aids in the absorption of B vitamins, which are key to healthy energy production.<sup>74</sup>

Full-fat dairy from 100% grass-fed cows usually contains vitamin K2, which is strongly associated with good bone health.<sup>75</sup> This offers further incentive to seek out cottage cheese made from organic, 100% grass-fed dairy.

## B-COMPLEX VITAMINS

Cottage cheese can also provide a good source of B-complex vitamins, which promote heart health and digestion, as well as metabolic and brain functions. B vitamins are necessary for proper enzyme production and function, which makes them critical in building muscle, fat loss, immune function, and blood health.<sup>76</sup>

One cup of cottage cheese contains approximately 24% of the daily recommended B12 intake.<sup>77</sup>

## SELENIUM

A one-cup serving of cottage cheese offers almost 30% of the recommended daily intake of selenium, which has been shown to increase antioxidant protection in the blood and regulates thyroid hormone activity.<sup>78</sup>

## CONCLUSION

Market analysts forecast that the cottage cheese market will continue to grow. As companies maneuver to capitalize on this upward trend, an increasing number and variety of cottage cheese products are sure to make their way onto grocery store shelves. Consumers can consult Cornucopia's companion scorecard to evaluate if any of the ever-growing number of cottage cheese products might be right for them. And, if you prefer to make your own, step-by-step instructions are included on the following page.





## 10 STEPS TO HEALTHY, HOMEMADE COTTAGE CHEESE

**MAKING YOUR OWN COTTAGE CHEESE** can be fun and easy and doesn't require expensive equipment. Here is a recipe for full-fat cottage cheese with probiotics and enzymes intact.<sup>79</sup>

### EQUIPMENT

- 2 large glass or ceramic mixing bowls
- Plate
- Spoon
- Strainer
- Candy thermometer
- Pot
- Knife

### INGREDIENTS FOR 2 SERVINGS

- 2 quarts of organic raw milk, preferably grass-fed
- 1 cup organic kefir plain, preferably raw (can substitute full-fat organic yogurt)
- $\frac{1}{2}$  tsp salt

### INSTRUCTIONS

1. Pour milk into a large mixing bowl. Cover the bowl with a plate and leave it in the refrigerator until all the cream rises to the top. This might take up to 24 hours.
2. Skim off the cream with a spoon or use a stainless steel turkey baster, and save it in the pint-sized glass mason jar or similar container in the refrigerator.
3. Mix the kefir or yogurt into the milk with a spoon. Cover the bowl with a plate once more, and leave on

the counter at room temperature until the milk thickens into a *curd*, resembling yogurt. This will take one to two days depending on your home's temperature and the freshness of the raw milk.






4. Using a knife, cut the curd in the bowl into tiny squares by slicing through it from top to bottom and left to right. Try to keep the cuts no larger than  $\frac{1}{4}$  -  $\frac{1}{2}$  inch apart.
5. Fill a medium-sized pot with filtered water about one inch deep. Put the pot on the stovetop on low heat. Place the uncovered bowl of curds on the pot of water.
6. Test the temperature of the curds every five minutes with a candy thermometer. After each five-minute check, stir the curds for a few seconds. Continue this process for about 30 minutes until the curds reach 110°F. All enzymes and probiotics will be preserved at this low temperature.
7. Remove the bowl from the heat when the desired temperature has been reached and separate the curds from the whey with a strainer set inside a mixing bowl. The curds will stay in the strainer and the liquid whey will run into the bowl underneath.
8. Rinse the curds still inside the strainer with cold, filtered water. Gently stir the curds with a spoon until all the water drains out.
9. Put the curds in a container and mix with the sea salt and the reserved cream from step two.
10. Enjoy your delicious homemade cottage cheese!



# APPENDIX A: RATING CRITERIA

## RATING CRITERIA

### ■ ORGANIC

		Cornucopia's Organic Dairy Scorecard rating
900	USDA organic	
800	USDA organic	
700	USDA organic	
600	USDA organic	
500	USDA organic	
0	Not organic	

### ■ INGREDIENTS

250	2 ingredients or less (milk and salt)
0	Multiple ingredients

### ■ CARRAGEENAN

200	No carrageenan
0	Carrageenan

### ■ ADDED SUGARS

100	No added sugars
50	Organic syrups, organic honey
20	Conventional syrup or sugar
0	Artificial sweetener

### ■ ADDED FLAVORS

100	No added flavors
50	Organic flavors or organic natural flavors
20	Natural flavors
0	Artificial flavors

### ■ PRESERVATIVES

100	None or organic
20	Natural (tocopherols, malic acid, sodium ascorbate, calcium carbonate, ascorbic acid)
0	Sulfites






### ■ THICKENERS/GUMS

100	No thickeners/gums
50	Organic gums
0	Conventional gums

### ■ GMO

100	Verified non-GMO
0	Not verified

## SCORING AND RATINGS

METHODOLOGY	SCORES	RATING
PRODUCT RATING Total Score + Points Based on Percentage of Cottage Cheese Line that is Certified Organic	0-250	
	251-500	
	501-1050	
	1051-1500	
	1501-1950	





## ENDNOTES

- 1 Jeanine Bentley. January, 2017. "U.S. Trends in Food Availability and a Dietary Assessment of Loss-Adjusted Food Availability, 1970-2014." United States Department of Agriculture, Economic Research Service. <https://www.ers.usda.gov/webdocs/publications/82220/eib-166.pdf?v=0>
- 2 Business Wire. July 9, 2018. "Global Packaged Cottage Cheese Market Analysis Forecast 2018-2022, With the Market Value Due to Rise at a CAGR of 9.73%." <https://www.businesswire.com/news/home/20180709005373/en/Global-Packaged-Cottage-Cheese-Market-Analysis-Forecast>
- 3 Iva A. Dingwall. 1964. "Pioneers' Dinner Table." Minnesota History, 34:54-58. <http://collections.mnhs.org/MNHHistoryMagazine/articles/34/v34i02p054-058.pdf>
- 4 Johnisha Levi. 2015. "Forbidden Fromage: Cheese Will Win the War." Culture, August 11, 2015. <https://culturecheesemag.com/blog/forbidden-fromage-cheese-will-win-war>
- 5 Johnisha Levi. 2015. "Forbidden Fromage: Cheese Will Win the War." Culture, August 11, 2015. <https://culturecheesemag.com/blog/forbidden-fromage-cheese-will-win-war>
- 6 Robert E. Jacobson. 1986. "Review of Current and Future Consumption Trends For Milk and Dairy Products." Journal of Dairy Science 69(5): 8. [https://doi.org/10.3168/jds.S0022-0302\(86\)80554-9](https://doi.org/10.3168/jds.S0022-0302(86)80554-9). [https://www.journalofdairyscience.org/article/S0022-0302\(86\)80554-9/abstract](https://www.journalofdairyscience.org/article/S0022-0302(86)80554-9/abstract)
- 7 Bonnie Benwick. 2013. "DIY Cottage cheese: Yes, you should." The Washington Post, February 19, 2013. [https://www.washingtonpost.com/lifestyle/food/diy-cottage-cheese-yes-you-should/2013/02/15/c9386322-73cb-11e2-95e4-6148e45d7adb\\_story.html?utm\\_term=.bb949755919f](https://www.washingtonpost.com/lifestyle/food/diy-cottage-cheese-yes-you-should/2013/02/15/c9386322-73cb-11e2-95e4-6148e45d7adb_story.html?utm_term=.bb949755919f)
- 8 Natalie Taylor. 2018. "Yogurt's New Era." Winsight Grocery Business, March 2, 2018. <https://www.winsightgrocerybusiness.com/fresh-food/yogurts-new-era>
- 9 Kim Severson. 2018. "Is America Ready to Love Cottage Cheese Again?" New York Times, June 26, 2018. <https://www.nytimes.com/2018/06/26/dining/cottage-cheese.html>
- 10 Liz Lian. 2016. "Is Cottage Cheese Finally Having a Comeback?" Kitchn, November 16, 2016. <https://www.thekitchn.com/is-cottage-cheese-having-a-comeback-238721>
- 11 Beth Newhart. 2019. "Cottage Cheese 'Renaissance' Heats Up in the US." Dairy Reporter, June 4, 2019. <https://www.dairyreporter.com/Article/2019/06/04/Cottage-cheese-renaissance-heats-up-in-the-US>
- 12 Elizabeth Crawford. 2018. "Modern updates to cottage cheese could help it steal market share from yogurt." Food Navigator, August 18, 2018. <https://www.foodnavigator-usa.com/Article/2018/08/16/Modern-updates-to-cottage-cheese-could-help-it-steal-market-share-from-yogurt>
- 13 Aaron Hutchins. 2016. "A Hail Mary for a failed dairy: Cottage cheese goes smooth." MacLean's, February 27, 2016. <https://www.macleans.ca/society/life/a-hail-mary-for-a-failed-dairy-cottage-cheese-goes-smooth/>
- 14 Rina Raphael. 2017. "Can Cottage Cheese Become the Next Greek Yogurt." Fast Company, June 21, 2017. <https://www.fastcompany.com/40432204/can-cottage-cheese-become-the-next-greek-yogurt>
- 15 Rina Raphael. 2017. "Can Cottage Cheese Become the Next Greek Yogurt." Fast Company, June 21, 2017. <https://www.fastcompany.com/40432204/can-cottage-cheese-become-the-next-greek-yogurt>
- 16 Rina Raphael. 2017. "Can Cottage Cheese Become the Next Greek Yogurt." Fast Company, June 21, 2017. <https://www.fastcompany.com/40432204/can-cottage-cheese-become-the-next-greek-yogurt>
- 17 7 CFR § 205.105; United State Department of Agriculture. 2013. "Organic 101: Can GMOs be Used in Organic Production?" <https://www.usda.gov/media/blog/2013/05/17/organic-101-can-gmos-be-used-organic-products>
- 18 Jorge Fernandez-Cornejo, Seth Wechsler, Mike Livingston, and Lorraine Mitchell. 2014. "Genetically Engineered Crops in the United States." United States Department of Agriculture – Economic Research Service, February, 2014. [https://www.ers.usda.gov/webdocs/publications/45179/43668\\_err162.pdf](https://www.ers.usda.gov/webdocs/publications/45179/43668_err162.pdf)

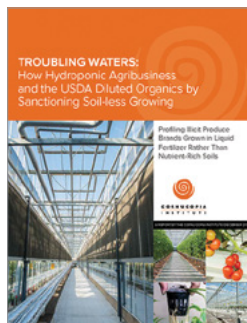
- 19 United States Department of Agriculture – Economic Research Service. December 2018. “Feedgrains Sector at a Glance.” <https://www.ers.usda.gov/topics/crops/corn-and-other-feedgrains/feedgrains-sector-at-a-glance/>
- 20 Food and Water Watch. May, 2016. “Under the Influence: The National Research Council and GMOs.” [https://www.foodandwaterwatch.org/sites/default/files/ib\\_1605\\_nrcinfluence-web.pdf](https://www.foodandwaterwatch.org/sites/default/files/ib_1605_nrcinfluence-web.pdf)
- 21 International Agency for Research on Cancer. 2018. “IARC Monographs Questions and Answers.” [https://monographs.iarc.fr/wp-content/uploads/2018/07/QA\\_ENG.pdf](https://monographs.iarc.fr/wp-content/uploads/2018/07/QA_ENG.pdf)
- 22 Tina Bellon. 2019. “California jury hits Bayer with \$2 billion award in Roundup cancer trial.” Reuters, May 13, 2019. <https://www.reuters.com/article/us-bayer-glyphosate-lawsuit/california-jury-hits-bayer-with-2-billion-award-in-roundup-cancer-trial-idUSKCN1SJ29F>
- 23 Tricia Thompson. January, 2011. “Starch in USDA-Regulated Foods.” Gluten Free Dietitian. <https://www.glutenfreedietitian.com/starch-in-usda-regulated-foods/>
- 24 7 CFR § 205.238.
- 25 The Cornucopia Institute. 2014. “Yogurt Report: Culture Wars.” <https://www.cornucopia.org/Yogurt-docs/CultureWars-FullReport.pdf>
- 26 7 CFR § 205.237
- 27 Marie Burcham and Mark Kastel. 2018. “The Industrialization of Organic Dairy: Giant Livestock Factories and Family Farms Sharing the Same Organic Label.” The Cornucopia Institute. <https://www.cornucopia.org/organic-dairy-report-and-scorecard/>
- 28 European Parliamentary Research Service. December, 2016. “Human health implications of organic food and organic agriculture; Science and Technology Options Assessment.” [http://www.europarl.europa.eu/RegData/etudes/STUD/2016/581922/EPRS\\_STU\(2016\)581922\\_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2016/581922/EPRS_STU(2016)581922_EN.pdf)
- 29 European Parliamentary Research Service. December, 2016. “Human health implications of organic food and organic agriculture; Science and Technology Options Assessment.” [http://www.europarl.europa.eu/RegData/etudes/STUD/2016/581922/EPRS\\_STU\(2016\)581922\\_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2016/581922/EPRS_STU(2016)581922_EN.pdf)
- 30 Marie Burcham and Mark Kastel. 2018. “The Industrialization of Organic Dairy: Giant Livestock Factories and Family Farms Sharing the Same Organic Label.” The Cornucopia Institute. <https://www.cornucopia.org/organic-dairy-report-and-scorecard/>
- 31 A Simopoulos. March 2, 2016. “An Increase in the Omega-6/Omega-3 Fatty Acid Ratio Increases the Risk for Obesity.” *Nutrients*, 8(3), 128. doi: 10.3390/nu8030128. <https://www.ncbi.nlm.nih.gov/pubmed/26950145>
- 32 Y Papanikolaou, et al. April 2, 2014. “U.S. adults not meeting recommended levels for fish and omega-3 fatty acid intake: results of an analysis using observational data from NHANES 2003-2008.” *Nutr J*. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3992162/>
- 33 C Benbrook, et al. December 9, 2013. “Organic Production Enhances Milk Nutritional Quality by Shifting Fatty Acid Composition: A United States Wide, 18-Month Study” *PLoS ONE* 8(12): e82429. <https://doi.org/10.1371/journal.pone.0082429>. <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0082429>
- 34 D Srednicka-Tober, et al. March 28, 2016. “Composition differences between organic and conventional meat; a systematic literature review and meta-analysis.” *British Journal of Nutrition*, 115(6), 1043-60. <https://www.ncbi.nlm.nih.gov/pubmed/26878675>
- 35 M Baranski, et al. September 14, 2014. “Higher antioxidant and lower cadmium concentrations and lower incidence of pesticide residues in organically grown crops: a systematic literature review and meta-analysis.” *Br J Nutr*, 112(5):794-811. doi: 10.1017/S0007114514001366. <https://www.ncbi.nlm.nih.gov/pubmed/24968103>
- 36 Andrea C. Gore, et al. 2014. “Introduction to Endocrine Disrupting Chemicals (EDCs): A Guide for Public Interest Organizations and Policy Makers.” Endocrine Society. <https://www.endocrine.org/-/media/endosociety/files/advocacy-and-outreach/important-documents/introduction-to-endocrine-disrupting-chemicals.pdf>
- 37 The Cornucopia Institute. April, 2016. “*Carrageenan: New Studies Reinforce Link to Inflammation, Cancer and Diabetes*.” <https://www.cornucopia.org/carrageenan-how-a-natural-food-additive-is-making-us-sick/>
- 38 Fahoum L, et al. March, 2017. “Digestive fate of dietary carrageenan: Evidence of interference with digestive proteolysis and disruption of gut epithelial function.” *Mol Nutr Food Res*, 61(3). <https://www.ncbi.nlm.nih.gov/pubmed/27718308>
- 39 The Cornucopia Institute. April, 2016. “*Carrageenan: New Studies Reinforce Link to Inflammation, Cancer and Diabetes*.” <https://www.cornucopia.org/carrageenan-how-a-natural-food-additive-is-making-us-sick/>
- 40 Dan Charles. 2018. “USDA Defies Advisers, Allows Carrageenan To Keep Organic Label.” *National Public Radio, The Salt*, April 4, 2018. <https://www.npr.org/sections/thesalt/2018/04/04/599550018/usda-sides-with-big-organic-to-allow-emulsifier-to-keep-organic-label>
- 41 Catherine Saint Louis. 2013. “Warning too Late for Some Babies.” *New York Times*, February 4, 2013. <https://well.blogs.nytimes.com/2013/02/04/warning-too-late-for-some-babies/>
- 42 The Cornucopia Institute. December, 2017. “Raising the Bar: Choosing Healthy Snack Bars versus Gimmicky Junk Food.” <https://www.cornucopia.org/wp-content/uploads/2018/02/BarReport-web.pdf>
- 43 Agricultural Marketing Service. May, 2013. “Can GMOs Be Used in Organic Products.” United States Department of Agriculture. <https://www.ams.usda.gov/publications/content/can-gmos-be-used-organic-products>
- 44 Anna Shaefer. 2017. “Is Maltodextrin Bad for Me?” *Healthline*, June 19, 2017. <https://www.healthline.com/health/food-nutrition/is-maltodextrin-bad-for-me>
- 45 K Nickerson and C McDonald. December 12, 2012. “Crohn’s Disease-Associated Adherent-Invasive Escherichia coli Adhesion is Enhanced by Exposure to the Ubiquitous Dietary Polysaccharide Maltodextrin.” *PLoS One*, 7(12):e52132. doi: 10.1371/journal.pone.0052132. <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0052132>
- 46 Harvard School of Public Health. 2019. “The Nutrition Source: Fats and Cholesterol.” <https://www.hsph.harvard.edu/nutritionsource/what-should-you-eat/fats-and-cholesterol/>

- 47 News Desk. 2015. "FDA Finalizes Decision to Ban Artificial Trans Fat." Food Safety News, June 16, 2015. <https://www.foodsafetynews.com/2015/06/fda-finalizes-decision-to-ban-trans-fat/>
- 48 Carly Vandergrindt. 2017. "What are Monoglycerides and Are They Safe to Consume?" Healthline, August 11, 2017. <https://www.healthline.com/health/food-nutrition/monoglycerides>
- 49 Cleveland Clinic. 2018. "Fats: Know Your Fats: Trans Fatty Acids (Trans fats)." Accessed June 25, 2019. <https://my.clevelandclinic.org/health/articles/17155-fats-know-your-fats/trans-fatty-acids-trans-fats>
- 50 Melissa Healy. 2015. "Is common food additive to blame for rising rates of bowel disease?" LA Times, February 25, 2015. <https://www.latimes.com/science/sciencenow/la-sci-sn-metabolic-bowel-emulsifiers-20150225-story.html>
- 51 Will Dunham. 2015. "Study links common food additives to Crohn's disease, colitis." Reuters, February 25, 2015. <https://www.reuters.com/article/us-science-emulsifiers/study-links-common-food-additives-to-crohns-disease-colitis-idUSKBN0LT26S20150225>
- 52 B Chassaing, et al. 2015. "Dietary emulsifiers impact the mouse gut microbiota promoting colitis and metabolic syndrome." *Nature*, March 5, 519: 92-96. <https://www.nature.com/articles/nature14232>
- 53 B Chassaing, et al. 2015. "Dietary emulsifiers impact the mouse gut microbiota promoting colitis and metabolic syndrome." *Nature*, March 5, 519: 92-96. <https://www.nature.com/articles/nature14232>
- 54 B Chassaing, et al. 2015. "Dietary emulsifiers impact the mouse gut microbiota promoting colitis and metabolic syndrome." *Nature*, March 5, 519: 92-96. <https://www.nature.com/articles/nature14232>
- 55 Marjorie Hecht. 2017. "Everything you should know about Potassium Sorbate," Healthline, March 22, 2017. <https://www.healthline.com/health/potassium-sorbate>
- 56 American Heart Association. 2018. "Added Sugars." Accessed June 25, 2019. <http://www.heart.org/en/healthy-living/healthy-eating/eat-smart/sugar/added-sugars>.
- 57 American Heart Association. 2018. "Added Sugars." Accessed June 25, 2019. <http://www.heart.org/en/healthy-living/healthy-eating/eat-smart/sugar/added-sugars>.
- 58 Peggy Pletcher. 2017. "Is cottage cheese good for you?" Medical News Today, July 12, 2017. <https://www.medicalnewstoday.com/articles/318400.php>
- 59 Harvard Medical School (2010-2019). "By the way, doctor: How much protein should I eat?" [https://www.health.harvard.edu/newsletter\\_article/how-much--should-i-eat](https://www.health.harvard.edu/newsletter_article/how-much--should-i-eat)
- 60 Harvard Medical School (2010-2019). "By the way, doctor: How much protein should I eat?" [https://www.health.harvard.edu/newsletter\\_article/how-much--should-i-eat](https://www.health.harvard.edu/newsletter_article/how-much--should-i-eat)
- 61 Kris Gunnars. 2018. "Protein Intake—How much Protein Should you eat per Day?" Healthline, July 5, 2018. <https://www.healthline.com/nutrition/how-much-protein-per-day>
- 62 Kris Gunnars. 2018. "Protein Intake—How much Protein Should you eat per Day?" Healthline, July 5, 2018. <https://www.healthline.com/nutrition/how-much-protein-per-day>
- 63 P Res, et al. August, 2012. "Protein ingestion before sleep improves postexercise overnight recovery." *Med Sci Sports Exerc*, 44(8), 1560-9. <https://www.ncbi.nlm.nih.gov/pubmed/22330017>
- 64 M Lejeune, et al. January 1, 2006. "Ghrelin and glucogen-like peptide 1 concentrations, 24-h satiety, and energy and substrate metabolism during a high-protein diet and measured in a respiration chamber." *Am J Clin Nutr.*, 83(1): 89-94. <https://academic.oup.com/ajcn/article/83/1/89/4649634>
- 65 C Kearns, et al. November, 2016. "Sugar Industry and Coronary Heart Disease Research, "A Historical Analysis of Internal Industry Documents." *JAMA Intern Med*, 176(11): 1680-1685. <https://jamanetwork.com/journals/jamainternalmedicine/article-abstract/2548255>
- 66 de Oliveira Otto M, et al. July 22, 2018. "Serial measures of circulating biomarkers of dairy fat and total and cause-specific mortality in older adults: the Cardiovascular Health Study." *Am J Clin N*, 108(3): 476-84. <https://academic.oup.com/ajcn/article/108/3/476/5052139?guestAccessKey=c18b1acf-2778-42b9-8d72-878c0e86cdbf>
- 67 C Kearns, et al. November, 2016. "Sugar Industry and Coronary Heart Disease Research, "A Historical Analysis of Internal Industry Documents." *JAMA Intern Med*, 176(11): 1680-1685. <https://jamanetwork.com/journals/jamainternalmedicine/article-abstract/2548255>
- 68 M Yakoob. March 22, 2016. "Circulating Biomarkers of Dairy Fat and Risk of Incident Diabetes Mellitus Among Men and Women in the United States in Two Large Prospective Cohorts." *Tufts Univ, Dept. of Nutr Sc & Pol*, 133: 1645-1654. <https://www.ahajournals.org/doi/abs/10.1161/CIRCULATIONAHA.115.018410>.
- 69 F Raziani. et al. October 1, 2016. "High intake of regular-fat cheese compared with reduced-fat cheese does not affect LDL cholesterol or risk markers of the metabolic syndrome: a randomized controlled trial." *Am J of Clin Nutr*, 104(4): 973-981. <https://academic.oup.com/ajcn/article/104/4/973/4557124>.
- 70 F Raziani. et al. October 1, 2016. "High intake of regular-fat cheese compared with reduced-fat cheese does not affect LDL cholesterol or risk markers of the metabolic syndrome: a randomized controlled trial" *Am J of Clin Nutr*, 104(4): 973-981. <https://academic.oup.com/ajcn/article/104/4/973/4557124>.
- 71 M Kratz, et al. July 19, 2012. "The relationship between high-fat dairy consumption and obesity, cardiovascular, and metabolic disease." *Eur J of Nutr*, 52(1): 1-24. <https://link.springer.com/article/10.1007%2Fs00394-012-0418-1>
- 72 S Rautianinen, et al. April 1, 2016. "Dairy consumption in association with weight change and risk of becoming overweight or obese in middle-aged and older women: a prospective cohort study." 103(4), 979-988 <https://academic.oup.com/ajcn/article/103/4/979/4662886>.
- 73 S Quinn et al. February, 1, 2013. "Interactions between calcium and phosphorus in the regulation of the production of fibroblast growth factor 23 in vivo." *Am J. Physiol Endocrinol Metab*, 304(3): E310-320. <https://www.physiology.org/doi/full/10.1152/ajpendo.00460.2012>
- 74 Elaine Watson. 2017. "Sleepy US \$1.1 bn cottage cheese category is ripe for disruption, says Muuna." Food Navigator, February 10, 2017. <https://www.foodnavigator-usa.com/Article/2017/02/10/1.1bn-cottage-cheese-category-ripe-for-disruption-says-Muuna#>

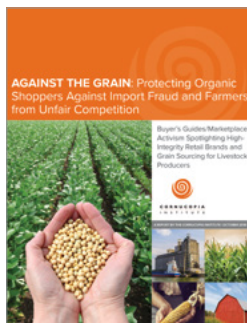


- 75 Kate Rheaume-Bleue. June 25, 2013. "Vitamin K2 and the Calcium Paradox: How A Little-Known Vitamin Could Save Your Life." Harper Collins. <https://books.google.com/books?id=WqHkmhNZuWcC&dq=Full-fat+dairy+grass+fed+cows+vitamin+K2.&lr=>
- 76 Harvard Medical School. November 14, 2018. "Listing of Vitamins." [https://www.health.harvard.edu/staying-healthy/listing\\_of\\_vitamins](https://www.health.harvard.edu/staying-healthy/listing_of_vitamins)
- 77 Harvard Medical School. November 14, 2018. "Listing of Vitamins." [https://www.health.harvard.edu/staying-healthy/listing\\_of\\_vitamins](https://www.health.harvard.edu/staying-healthy/listing_of_vitamins)
- 78 Tinggi U. February 18, 2008. "Selenium: its role as antioxidant in human health." Environ Health Prev Med, 13(2): 102-108. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2698273/>
- 79 Sarah Pope. "Perfectly Probiotic Cottage Cheese (enzyme rich too)." The Healthy Home Economist, May 15, 2019. <https://www.thehealthyhomeeconomist.com/traditional-probiotic-perfect-cottage-chees/>

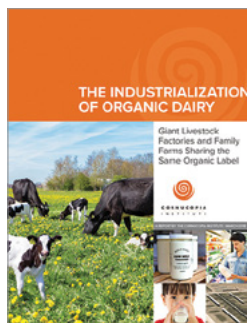
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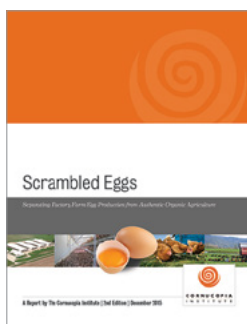
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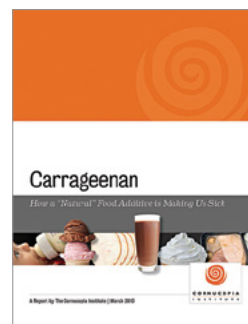
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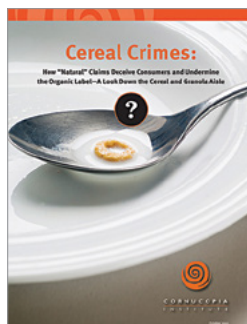
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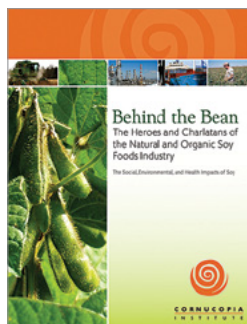
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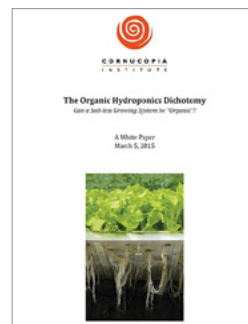
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