

In response to consumer demands for healthy, better-for-you foods and beverages, there's been a considerable increase in the number of products making nutritional claims. With so many to choose from, food and beverage manufacturers need to carefully consider how to differentiate their products from those of their competitors' — especially when it comes to:

Taste. Texture. Nutrition. Price.

Manufacturers can offer stand-out products by enhancing them with whey protein — a versatile, all-natural ingredient that can be used in a wide variety of applications. Consider these top 10 reasons why whey protein is an ideal ingredient to incorporate into your formulations.

1. CONSUMERS DEMAND PROTEIN.

Today's consumers aren't just looking to eat healthier; they're specifically looking for more protein in their diets. An estimated <u>55%</u> of U.S. households say high protein is an important factor in their food purchasing habits, and 6% of households include someone with a high-protein diet.

The protein-rich beverage market has skyrocketed in recent years. The <u>U.S. sports drink market</u> is expected to grow to more than \$1.135 billion by the end of 2023, reflecting a compound annual growth rate (CAGR) of 4.3% and far outpacing earlier predictions. Other research suggests the market may grow by as much as <u>7.8%</u> by 2025. Eliminating turbidity in clear protein beverages is a major challenge for many formulators who've tried using commodity whey protein isolate (WPI). <u>Grande Ultra WPI</u>, however, provides consistent clarity across a wide pH range.

2. WHEY PROTEIN IS PREFERRED AND TRUSTED.

Whey protein is a go-to source for energy, nutrition and weight loss. Consumers are taking note of scientific studies showing that people who consumed 30% of their calories in the form of protein ate <u>441 fewer calories</u> per day. Whey protein, in particular, resulted in the highest increase in energy expenditure and higher fat oxidation <u>compared to alternative proteins</u>, leading to greater weight loss.

With whey protein being the preferred source for many food manufacturers and consumers alike, other food and beverage manufacturers are reformulating to meet the increasing consumer demand and staying power of protein-rich foods with innovative product launches.

Whey vs. Soy vs. Casein

Studies show whey protein <u>beat out other proteins</u> with the highest increase in energy expenditure and higher fat oxidation.

3. WHEY REIGNS SUPREME AS THE BEST PROTEIN OPTION.

Not only is whey protein a preferred protein source, it's the best when compared to other popular protein sources like soy, rice, pea and casein. Whey protein is the clear-cut favorite in terms of protein quality, quantity and nutrition. It also ranks higher in essential amino acid scores, taste, texture, and even appearance. Of all the different protein types, whey is also known to provide the cleanest, most neutral taste in food and beverage applications.

PROTEIN QUALITY COMPARISON

| PROTEIN TYPE | BIOLOGICAL VALUE (BV) | PROTEIN EFFICIENCY RATIO (PER) | DIGESTIBLE INDISPENSABLE AMINO ACID SCORE¹ (DIAAS) | LIMITING AMINO ACID |
|-----------------|--------------------------|--------------------------------------|--|------------------------|
| Whey | 104 | 3.2 | 115 | Histidine |
| Casein | 80 | 2.5 | 111 | Histidine |
| Soy | 74 | 2.1 | 92 | Methionine+Cysteine |
| Pea | 65 | 1.4 | 74 | Methionine+Cysteine |
| Rice | 64 | 2.0 | 64 | Lysine |

¹Report of an FAO Expert Consultation (2013) Food and Agriculture Organization of the United Nations. Dietary Protein Quality Evaluation Nutrition. http://www.fao.org/ag/humannutrition/35978-02317b979a686a57aa4593304ffc17f06.pdf

4. INCREDIBLE HEALTH BENEFITS.

Because whey protein is the highest quality source of protein available among competing proteins, it offers superior health benefits. Not only is whey a good fuel source for athletes looking to build and strengthen muscles, but it also has many benefits for everyday consumers and those trying to manage their Type 2 diabetes.

How? Studies indicate that consuming whey protein, which is rich in branched chain amino acids:

- Releases gastric hormones that slow the digestion of carbohydrates
- Helps maintain lower blood sugar levels
- Improves satiety, leading to consuming fewer calories
- Increases bone density in elderly adults

- Stimulates muscle protein synthesis to help build muscle
- Decreases muscle soreness and fatigue
- Lowers cholesterol
- Reduces the risk for cardiovascular disease and strokes

Whey protein's ability to help improve health is one of the main reasons it's known as a

SUPERFOOD

5. COMPLIES WITH CLEAN LABEL INITIATIVES.

When it comes to nutrition labels, less is definitely more. Consumers are actively avoiding chemical additives and preservatives and seeking out more natural, simple ingredients. Clean labels are <u>no longer just a trend</u>; they're the norm. Factor in whey protein's ability to replace artificial ingredients in a variety of applications and its natural production process, and food and beverage manufacturers have the perfect solution to clean up their labels.

All of Grande Custom Ingredients Group's whey protein products are single ingredient solutions that allow food manufacturers to control their products better than blends of starches and gums, and using fewer ingredients means <u>simplified supply chain management</u> and fewer inventory control headaches.

Shoppers Want More Than Clean Labels

Shoppers want transparency. <u>86%</u> of shoppers would feel a higher sense of trust toward food manufacturers that had complete and easy-to-understand ingredients.

6. NATURAL PRODUCTION PROCESS.

As shoppers seek more transparency about where their food comes from and the ingredients used to make it, they're increasingly avoiding foods containing artificial and hard-to-pronounce ingredients. The good news is they are <u>willing to pay more</u> for natural, "better-for-you" alternatives.

At Grande Custom Ingredients Group, we're proud to make our all-natural whey protein products using only the freshest Grade A milk from Midwest dairy producers, and our production process uses zero chemical modifications, additives, preservatives or antibiotics. Just because our products come in powdered and concentrate form doesn't mean they aren't made with fresh, natural ingredients, and our whey production process uses many of the same, traditional techniques that have been in use for more than 200 years.

Is Whey Protein Really All Natural?

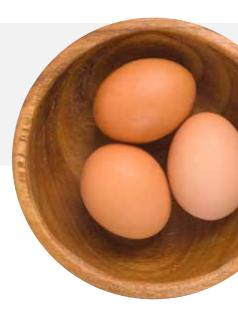
Yes! Much like tomato paste, juice concentrate or other concentrated foods, whey protein powder is an all-natural, real food. It is the dried form of whey which is derived from the age-old craft of cheesemaking.

7. COST SAVINGS.

Not only is whey protein ideal for making your products more nutritious, it also has significant cost savings potential. By using <u>Grande Bravo</u>[®] functional whey protein concentrate, for example, food manufacturers and restaurants

can substitute high-cost dairy ingredients like cream, butter, fat, cheese and cream cheese. They can also replace their expensive egg ingredients with our safe, cost-effective whey protein. And, because many manufacturers, restaurants and grocery chains are committing to <u>using only cage-free eggs</u> by 2025, the associated costs are expected to climb, making whey protein an even more desirable alternative.





8. REDUCE FAT AND CALORIES.

For food manufacturers looking to create low-fat, low-calorie versions of their current products, whey protein is the ideal ingredient and substitute. Looking at the before and after nutritional information for the chipotle cream sauce recipe below, for example, you can see just how effective whey protein is at reducing fat and calories without compromising the flavor, texture and mouthfeel of the original.

CHIPOTLE CREAM SAUCE

| | CONTROL | 50% CREAM |
|------------------------------------|---------|-----------|
| Water | 56.95 | 69.95 |
| Cream | 30.00 | 15.00 |
| Egg Yolk, Enzyme Modified | 2.00 | 2.00 |
| Parmesan Cheese, Grated | 2.00 | 2.00 |
| Starch, PURE-GEL B994, GPC | 2.00 | 2.00 |
| Butter, Non Salted | 2.00 | 2.00 |
| GRANDE BRAVO® | _ | 2.00 |
| Chipotle Peppers, In Adobe, Pureed | 2.00 | 2.00 |
| Sugar, Granulated | 1.00 | 1.00 |
| Salt | 1.00 | 1.00 |
| Honey | 0.50 | 0.50 |
| Onion Powder | 0.20 | 0.20 |
| Garlic Powder | 0.20 | 0.20 |
| Xanthan Gum | 0.10 | 0.10 |
| Lactic Acid | 0.05 | 0.05 |
| | 100 | 100 |

NUTRITIONAL ANALYSIS

SERVING SIZE: 1 oz. (60g)

| | CALORIES | TOTAL FAT | SAT. FAT | PROTEIN |
|---------------|----------|-----------|----------|---------|
| CONTROL | 91 | 9 | 5 | 1 |
| GRANDE BRAVO® | 65 | 5 | 3 | 2 |



9. AVOID SHELF-LIFE AND HANDLING ISSUES.

As consumers look for more on-the-go foods and snacks that fit their busy "eat-whenever-you-have-time" schedules, whey protein ingredients provide shelf-stable solutions to help food manufacturers create healthy products. <u>Grande Primo</u>™ dried yogurt and cultured dairy products, for example, provide the authentic yogurt flavor and texture consumers crave, without the handling and perishability worries of fresh yogurt. Our Y100 formulation even meets the Code of Federal Regulations (CFR) for yogurt prior to drying, and our G60 dried Greek yogurt formulation boasts a tart, robust Greek yogurt flavor and higher protein content!

Help Reduce Food Waste

Wasted food is the single largest category of material placed in municipal landfills. By extending the shelf life of products offered to consumers, you can enhance sustainability initiatives and help reduce the estimated 30–40% of food that is wasted each year in the United States

10. ENHANCE PROTEIN CONTENT WITHOUT ALTERING FLAVOR, TEXTURE OR MOUTHFEEL.

Based on less than pleasurable experiences in the past, some consumers formed the impression that low-fat, low-calorie products don't taste as good as the original. Our whey protein ingredients shatter that misconception—they even enhance the flavor, texture, and mouthfeel in many applications.

Of all the protein sources available to food manufacturers, nothing matches the clean, neutral taste of whey protein, and all of our whey protein ingredients are formulated with several different profiles so you can find the ideal match for your specific application. Just look at all the variety of different profiles for Grande Bravo®, for example:

BRAVO® RELATIVE FUNCTIONAL CHARACTERISTICS

| PRODUCT | Viscosity Upon HYDRATION | Viscosity Upon HEATING | рН | FLAVOR | MOUTHFEEL |
|-------------------|-----------------------------|---------------------------|-----|---------------|-----------------|
| GRANDE BRAVO® 300 | High | High | 6.3 | Mild, Milky | Heavy, Creamy |
| GRANDE BRAVO® 500 | High | High | 4.9 | Slightly Tart | Heavy, Creamy |
| GRANDE BRAVO® 550 | High | High | 6.3 | Mild, Sweet | Heavy, Creamy |
| GRANDE BRAVO® 510 | Medium | Medium | 4.9 | Slightly Tart | Slick, Slippery |
| GRANDE BRAVO® 600 | Very High | Very High | 6.3 | Mild, Milky | Heavy, Tacky |

Ideal Food Applications Using Whey Protein

- Soups, Sauces, Spreads & Dips
- Cheese Sauces & Fillings
- Salad Dressings & Low-fat Foods
- Coatings & Seasonings
- Bakery & Confectionery

- Ice Cream & Desserts
- Smoothies, Energy Drinks & Clear RTD Beverages
- Protein Bars, Snacks & Meal Replacement Bars
- Nutritional Supplements, and much more!

Get more information about how natural whey protein products can help enhance your food and beverage applications.

Contact our expert food scientists or call 800.772.3210.



