

Dairy proteins shine

Whey and milk proteins score high in quality, sensory appeal.

As ingredients, whey and milk proteins “address formulator needs for sustainably produced, nutritious, functional, tasteful, versatile, consumer-appealing, securely sourced ingredients for use in food and beverage products,” according to “A New Era for Protein: Why U.S. Dairy Delivers in the Crowded Protein Marketplace,” a 2018 report from the Arlington, Va.-based U.S. Dairy Export Council (USDEC). In contrast, most plant proteins are lower in quality and fall short in essential amino acids.

We share some findings from that report here.

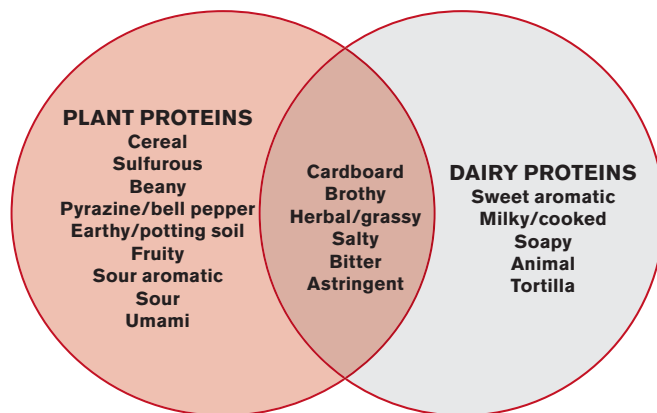
Dairy protein is high in quality

PDCAAS* of common protein foods

Protein source	PDCAAS
Milk	1.00
Whey	1.00
Egg	1.00
Soy Protein isolate	1.00
Casein	1.00
Beef	0.92
Soy	0.91
Pea	0.67
Oat	0.57
Whole wheat	0.45

*The current measure of protein quality in the United States is the Protein Digestibility Corrected Amino Acid Score, or PDCAAS, according to the USDEC report.
Source: USDEC report, citing data from the *Journal of Nutrition* (<https://tinyurl.com/y9salwsb>).

Dairy proteins offer a superior sensory experience



In a sensory evaluation of nutritional bars made with different dairy and plant-based protein sources, dairy proteins exhibited sweet aromatic and cooked/milky attributes, while plant sources exhibited beany, earthy, sulfurous and sour notes.

Source: USDEC report, citing: Kapoor, R., Burrington, K.J., Jiang, H., Larson S., M.A. “Characterization of Functional and Sensory Properties of Select Commercial Food Protein Ingredients.” Presented at the Wisconsin Center for Dairy Research Forum, 2017.

What 25 grams of protein looks like, by protein source

Whey protein
1 scoop
120 calories
2.9g leucine
12.5g EAAs



Chicken breast
113 grams
140 calories
2.1 grams leucine
11.0 grams EAAs



Skim milk
3 cups
250 calories
2.3 grams leucine
11.5 grams EAAs



Eggs
4 large
290 calories
2.2 grams leucine
11.2 grams EAAs



Black beans
1-3/4 cups
380 calories
2.2 grams leucine
10.2 grams EAAs



Peanut butter
7 tablespoons
660 calories
1.7 grams leucine
7.2 grams EAAs



Oatmeal
4 cups
670 calories
2.0 grams leucine
9.9 grams EAAs



Essential amino acids (EAAs) are critical to the support of muscle protein synthesis (essential to building, growing and repairing body tissues). But the branched-chain amino acid leucine has been shown to be the key amino acid stimulating the initiation of muscle protein synthesis. Animal proteins, including dairy proteins, tend to have a higher content of leucine (and EAAs, in general) than plant-based proteins do.

Source: USDEC report, citing data from the Whey Protein Isolate Nutrition Panel.