

Best Plant Protein

Goal

Best Plant Protein (BPP) is designed for people seeking a high quality, non-animal protein (PRO) source to help increase total protein intake or timely deliver protein as needed. Proper use of highly rated protein sources (digestibility and amino acid content) can deliver the exercise-induced higher protein requirements for athletic training while minimizing calories to achieve body composition goals. BPP comes in a powdered mix form which enables one to adjust the total meal (or daily) protein and other nutrient content as desired and remain within a specific calorie allotment.

The multi-source fortified protein blend in BPP (pea protein isolate, cranberry seed, *sacha inchi* seed and chia seed) combine to closely mimic the amino acid structure of whey protein, which delivers superior absorption and amino acid profile, specifically essential amino acids (EAA) than other sources. Therefore, compared to other plant proteins, BPP would have a greater opportunity to yield whey protein's established benefits, which include enhanced effects on all mechanisms of action related to muscle protein synthesis (MPS) as well as other diet and training outcomes when whey is compared to other protein sources with all else being equal (see section on [WheySmooth](#)).

Rationale

Introduction

Dietary protein is consumed from myriad food sources, and each contains a unique non-protein content that can have different health related effects aside from their respective contributions on muscle protein synthesis (MPS).^{1,2,3} Little argument remains about whole animal, non-milk proteins (so-called red meats) consumed in the typical western diet (highly processed and often containing high amounts of unhealthy fats) being less healthful overall when compared to plant proteins or leaner meats (e.g. chicken, fish, lean red meats such as flank/round cuts, etc.).^{2,4,5,6,7} However, this discussion is relatively moot as it relates to the use of protein supplements for pre/post workout consumption or as a protein addition to daily intake since the majority of the products sold for these purposes have the bulk of non-protein contents removed in order to isolate the desired protein portion (amino acids).^{8,9} Nevertheless, for various reasons many people prefer a plant derived protein supplement.

Supporting MPS

The reader is referred to the [WheySmooth Section](#) for a detailed discussion on the use of protein in daily diet and exercise. Therefore, this section is solely related to use and proper formulation of a plant protein supplement in lieu of an animal-based counterpart for the purposes of enhancing exercise-induced gains and adding protein to the daily diet as needed.

Animal proteins are superior to equal amounts of single sourced (non-fortified) plant proteins in satisfying human protein (amino acid) requirements^{3,10,11,12,13,14,15} with the overall advantage going to whey protein especially as it relates to muscle protein synthesis throughout the lifespan.^{8,13} Whey's potential superiority in delivering muscle protein synthesis and weight control outcomes is based on its unique functional properties which include: 1) higher EAA content (12.4 g/25 g); 2) higher BCAA (5.6 g/25 g); 3) higher leucine (3 g/25 g); 4) faster digestion to timely amplify MPS during anabolic windows; 5) less splanchnic amino acid (AA) extraction so more AA are directly available for MPS.^{8,16,17,18}

It is also evident that for reasons such as allergies, environmental protection and nutrition, health, religious or cultural biases, many people seek plant-based proteins. Therefore, a multiple sourced (fortified) plant protein designed to closely resemble the beneficial AA structure of whey including EAA (particularly BCAA/leucine) content along with enhanced digestibility, may have the greatest potential to mimic whey protein's results especially as it relates to MPS.¹¹

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Pea Protein Isolate

Best Plant Protein (BPP) uses a pea protein isolate as the predominate protein source and combines small amounts of chia, cranberry and sacha inchi seed proteins, along with amino acid fortification to closely mimic whey protein's AA profile and digestibility factor in order to potentially deliver similar results as described above (see Table 1). The protein isolate is from the yellow pea (*Pisum sativum*) in which the starch and fiber are removed, leaving an 85% protein fraction and very small amounts of carbohydrate. The remaining isolate is highly pure, free of allergens (unlike soy) and of great nutritional value with an amino acid score of 0.96 before fortification.

Table 1- Comparison of 25 g of Best Plant Protein and Whey Protein

	Best Plant Protein	Whey
Essential Amino Acids	11 g	12.4 g
BCAA	7.5 g	5.6 g
Leucine	2.5 g	3.0 g
Digestive aid enzyme blend	Alpha-galactosidase and bromelain	Not necessary (see Whey Smooth section)

As mentioned above, in clinical trials, whey protein has often demonstrated superior results compared to other proteins, including soy, rice, beef, etc., in respect to its effects on MPS (see [WheySmooth section](#) for all references). Currently, we have found one study where pea isolate protein alone and whey protein supplementation were compared. Babault et al. had 161 healthy males consume either equal amounts of whey, pea or placebo twice daily (once immediately post exercise) during a 12 week resistance training program. Both proteins resulted in equally superior measurements of muscle thickness and strength than placebo. These results suggest a pea protein isolate supplement may be an acceptable alternative to whey protein supplementation for exercise related purposes.⁹ Note the higher amount of BCAA per gram of protein in the BPP vs Whey (Table 1). This factor may help give BPP an equal MPS effect because BCAA's are known to escape splanchnic extraction leaving greater amounts available for direct MPS.^{17,19,20,21,22} The natural pea protein source is also fortified with BCAA's and glutamine in order to help reach and surpass the content found in whey protein.

Other Minor Protein and Fat Sources

These sources contribute less than 5% of total protein but contribute to taste, texture and BPP's healthy fat content and amino acid score.

Sacha Inchi Seeds

Sacha Inchi (*Plukenetia volubilis* L.) also known as Inca Inchi is a perennial oleaginous woody vine indigenous to Peruvian jungles. From its fruit comes the seeds containing high levels of protein (30%) and oil (50%), in which the oils are predominately (93%) healthy polyunsaturated fatty acids (PUFA).^{23,24,25} Peruvian Indians have consumed them in foods and beverages for hundreds of years.²⁶

Chia Seeds

Chia seed (from *Salvia hispanica* L.) is a traditional food in central and southern America. Currently, it is widely consumed (in much greater amounts than in BPP) for various health potential benefits primarily related to maintaining healthy serum lipid levels.^{27,28}

Cranberry Seeds

Cranberry is an alternative source of protein that can be powdered, condensed, and packaged. It has a strong nutritional profile and as noted above, contained in this product only for its contribution to taste, texture and AA profile.^{29,30}

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Co-factors Including Sweeteners

Co-factors in a protein powder are combined to deliver better taste, texture, mixing ability, uniform nutrient distribution, ingredient flow and stability, including during cooking or baking, and a practical product shelf life. Flavors in BPP are all natural sources.

Sweeteners

Stevia rebaudiana Bertoni is a small perennial shrub native to South America and is known as “stevia” or “honey leaf” for its sweetness. It is a unique species containing the glycosides stevioside and rebaudioside A, which are responsible for the sweet taste of the leaves.³¹ Extracted and used as a sweetener for food products, it is 10–15 times sweeter than sucrose and because the human body does not metabolize these sweet glycosides, it obtains no-calories from stevia.³²

Studies have suggested that in addition to the plant’s glycosides sweetness qualities, steviosides and their related compounds may contribute other therapeutic benefits such as anti-hyperglycemic, anti-hypertensive, anti-inflammatory, anti-tumor, anti-diarrheal, and possibly immunomodulatory actions.³³ However, the stevia used in BPP appears at the end of the ingredient list as it is present in virtually negligible amounts per serving and thus, besides the associated benefits of replacing sugars, claims no effects within the body other than taste. Although stevia does go through a processing procedure in order to be extracted from the plant and used as an effective sweetening agent, it is considered a natural sweetener at this time. Stevia is also classified as a non-nutritional sweetener (NNS), meaning it sweetens with little or no carbohydrate or energy. NNS’s are regulated by the Food and Drug Administration as food additives and are categorized as “generally recognized as safe”.³⁴ The Food and Drug Administration’s approval process includes determination of probable intake, cumulative effect from all uses, and toxicology studies in animals. Seven NNS are approved for use in the United States: acesulfame K, aspartame, Luo Han Guo fruit extract, neotame, saccharin, stevia, and sucralose.³⁴

Enzyme Blend

Bromelain and alpha-galactosidase are enzymes added to enhance vegetable protein digestion. The proteolytic enzyme bromelain, helps break the long chain molecules of proteins into shorter peptides and eventually into amino acids.³⁵ Alpha-galactosidase is a glycoside hydrolase enzyme that hydrolyzes the glycolipids and glycoproteins to help form more digestible components, which is why it is also used in the product Beano.^{36,37}

Xanthan Gum (XG)

Xanthan gum is a water soluble, high molecular weight natural polysaccharide produced by a fermentation process.³⁸ Due to its soft texture, xanthan gum is widely used as a thickener or viscosifier in the food industry.³⁹ XG also functions as a stabilizer for many different formulations with applications in pharmaceuticals, dietary supplements and food products such as Best Plant Protein.⁴⁰

Summary

Best Plant Protein (BPP) is considered a fortified protein that contains nothing from animal sources making it vegan friendly and an ideal protein product for people seeking non-animal protein supplementation. BPP’s base protein source, pea, has been fortified with amino acids (BCAA, glutamine) and plant seed proteins in order to closely match the amino acid profile of whey protein, which has been clinically shown to be superior to other proteins in exercise and weight management outcomes (see [Whey Smooth section](#) for details). Therefore, compared to other complete plant protein sources, BPP’s ingredients and macronutrient profile being low fat, carbohydrate and calories per protein amount (21g protein, 7g CHO, 3g fat, 130 calories) make it an ideal protein source for weight/fat conscious exercisers/athletes to use as a pre/post workout supplement and/or integrated into a weight control daily meal plan. Additionally, since BPP is a convenient and superior vegetable protein source for the stimulation of MPS, it could act as a positive influence on the regulation of muscle mass across the lifespan for vegetarians and vegans.

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Typical Use

Best Plant Protein (BPP) is ideal for athletes or exercisers desiring a vegetable-based protein to acquire the highest amount of protein with the fewest calories in order to maximize training-induced size, performance, strength and body composition outcomes.

- For anyone pursuing weight/fat loss, BPP is ideal as a high vegetable-based, low calorie protein source
- Anyone throughout life who is not meeting protein requirements for specific goals including ageing
- As a pre/post workout supplement for vegetarian physique competitors or other weight/body-fat conscious athletes during the final weeks of competition dieting, in order to meet protein requirements with fewer calories
- Any exerciser during intense training and especially when combined with calorie restriction
- Anyone wanting a great tasting, convenient, and high quality vegetable-based protein source

Precautions

Older data suggested an increase in calcium loss with high protein intakes, which may predispose the individual to an increased risk of osteoporosis.⁴¹ However, newer studies have found the link between protein intake and bone health to be positive^{42,43} or no effect.^{44,45} The Institute of Medicine's and other related studies have concluded that levels of dietary protein are not associated with a decrease in renal function with age.^{46,47,48,49,50,51,52,53}

Contraindications

There are no known contraindications with BPP's ingredients for normal healthy people.

Adverse Reactions

There should be no adverse effects in healthy users at the recommended doses unless allergic to specific plant proteins contained in BPP – there is no soy in this product

Stevia

Clinical trials have not found any significant adverse events with stevia. Theoretically, stevia (like other plant derived "natural substances") could trigger an allergic reaction in individuals sensitive to plants in the Asteraceae/Compositae family such as ragweed, chrysanthemums, marigolds, daisies, etc., but this would be highly unlikely with the extremely low amount of stevia contained in BPP.⁵⁴

Upper Limit/Toxicity

Currently there is no UL established for protein.

Summary

Purpose

- Because of Best Plant Protein's (BPP) functional structure of high essential amino acids including BCAA (especially leucine) and its rapid skeletal muscle bioavailability, BPP may potentiate a greater muscle protein synthesis (MPS) and health response per calories and gram of protein than other complete vegetable protein sources
- Vegetable-based, fast acting, low calorie and highly anabolic pre and post workout supplement for athletes to maximize MPS during restricted calorie dieting to help maintain or amplify (during "anabolic windows") MPS during fat/weight loss (e.g. physique competitors, fighters/wrestlers, weight lifters, etc.)
- Especially important for vegetarian older athletes seeking physical improvements as the body becomes more resistant to the anabolic effects of food and exercise
- Used as a primary protein source during a meal replacement weight loss program to establish the best possible outcome through the use of a vegetable protein

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Unique Features

- 21 grams of a high biological value protein, 7 g of carbohydrates, 3 g of healthy fat in only 130 calories
- Co-factors from all natural sources ensure nutrient uniformity and stability with good taste and easy mixing
- BPP is hypoallergenic, gluten free, contains no dairy or soy and is non-GMO
- No gas or bloating as is common with other plant protein powders
- Contains <1 gram of sugar and uses the natural sweetener stevia
- 3rd party tested by Covance Labs, LA Analytical or Chemical Solutions
- Formulated and manufactured for great taste and pleasing texture in a regularly inspected NSF certified facility, in compliance with Good Manufacturing Practices (GMPs) exclusively for dotFIT, LLC

Supplement Facts

SUPPLEMENT FACTS		
Serving Size: 1 Scoop (34 g)		
Servings Per Container: 30		
	Amount Per Serving	% Daily Value*
Calories	130	
Calories from Fat	20	
Total Fat	3 g	5%
Saturated Fat	0,5 g	3%
Sodium	270 mg	11%
Potassium	160 mg	5%
Total Carbohydrate	7 g	2%
Dietary Fiber	1 g	<1%
Sugars	<1 g	**
Protein	21 g	42%
Calcium	65 mg	6%
Iron	7 mg	38%
Magnesium	40 mg	10%
Multi Source Plant Protein Blend: (Pea protein isolate, Cranberry seed, Chia seed, Sacha Inchi seed)	23,855 mg	**
Branch Chain Amino Acids: (L-Leucine, L-Isoleucine and Valine)	6,225 mg	**
Glutamine	3,475 mg	**
Enzyme Blend: (Alpha-galactosidase and Bromelain)	110 mg	**
* Percent Daily Values are based on a 2,000 calorie diet. ** Daily Value not established.		
Other Ingredients: Inulin, natural cocoa, natural chocolate, stevia, xanthan gum, natural flavor, glycine and silica.		

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