TWO NEW PRODUCTS FROM
MOSS NUTRITION – ORGANIC
SELECT PEA VANILLA AND
ORGANIC SELECT PEA
UNFLAVORED

For quite some time now we have provided you with several meal supplement/meal replacement products such as Select Meal and SarcoSelect that contain pea protein. However, almost since the time that we released these products you have been requesting that we carry a stand-alone pea protein product. We are glad to announce that we have now fulfilled that request with both vanilla flavored and unflavored versions – Organic Select Pea Vanilla and Organic Select Pea Unflavored.

What are the advantages of these products over other pea protein products on the market? The first and maybe the most important is stated in the name – both versions contain organic pea protein. It should also be noted that both products come from non-GMO sources. However, neither of these key attributes really address why most practitioners and patients purchase pea protein. Overwhelmingly, the main reason pea protein has gained in popularity over the last few years is that it has been generally regarded to have many of the clinical advantages of whey protein relating to protein and amino acid content and improvements in muscle mass without the common disadvantages of whey protein relating to digestibility and allergenicity.

Interestingly though, even though many, if not most, clinicians and patients enthusiastically believe that pea protein compares well to whey protein in terms of the advantages mentioned above (amino acid content and muscle building), a thorough literature search has yielded surprisingly little documentation to support this belief, particularly in relation to increased muscle mass.

Fortunately, research is now appearing in the published literature that makes it clear there is good science to support this belief.

**Leucine content – Whey versus pea protein**

While all the amino acids in any protein supplement are important, particularly the essential amino acids, several studies and clinical reports have made it clear that the content of branched-chain amino acids (Leucine, isoleucine, and valine) are the most important in terms of improving muscle mass and the general clinical picture of the average patient. Furthermore, as I have pointed out repeatedly in past newsletters and presentations, it appears that, of the three branched-chain amino acids, leucine is the most important from a clinical outcome standpoint. Therefore, one of the best ways to compare whey and pea protein in terms of the ability to improve muscle mass and patient quality of life is the leucine content.

I’m glad to point out that, in terms of leucine content, whey and pea protein compare quite favorably. As noted on the label of our Select Whey products, the leucine content is approximately 11%, which is generally considered very high in comparison with other whey protein products in the marketplace. According to the paper “Amino acid composition and antioxidant properties of pea seed (Pisum sativum L.) enzymatic protein hydrolysate fractions” by Pownall et al (Pownall TL et al. *J Agric Food Chem*, Vol. 58, pp.
the form of pea protein contained in the Organic Select Pea products, pea protein isolate, contains approximately 9% leucine. From a clinical standpoint, this amount of leucine compares very favorably with whey protein.

**Whey protein versus pea protein – clinical data**

Of course, while it is nice that many people believe that whey and pea protein perform equally well clinically, and while it is nice that the two proteins compare favorably in terms of the key anabolic amino acid, leucine, does any clinical research exist that provides proof that the belief and the leucine content translate into equal patient outcomes between the two protein sources? Until recently, the answer was, somewhat surprisingly given the popularity of pea protein, no. Fortunately, this changed in 2015 with the publication of a comparative study between the two protein sources in relation to muscle building during exercise. Even with exercise, do the two protein sources perform equally in terms of building muscle mass? This question was answered by the study “Pea proteins oral supplementation promotes muscle thickness gains during resistance training: a double-blind, randomized, placebo-controlled clinical trial vs. whey protein” by Babault et al (Babault N et al. J Int Soc Sports Nutr, Vol. 12, No. 3, 2015). The quote below provides an overview about the study participants and how the study was conducted:

“One hundred and sixty one males, aged 18 to 35 years, were enrolled in the study and underwent 12 weeks of resistance training on upper limb muscles. According to randomization, they were included in the pea protein (n = 53), whey protein (n = 54) or placebo (n = 54) group. All had to take 25 g of the proteins or placebo twice a day during the 12-week training period. Tests were performed on biceps muscles at inclusion (Day 0), mid (Day 42) and post training (Day 84). Muscle thickness was evaluated using ultrasonography, and strength was measured on an isokinetic dynamometer.”

What were the results? As you might expect, due to the exercise all had improved muscle mass:

“The present results showed significant gains in muscle mass as attested by thickness of the biceps brachii in all groups.”

However, even though all improved, did the protein sources provide additional improvement over what was seen in the placebo group? The authors state:

“The pea protein group displayed a significantly greater effect than the placebo on muscle thickness and whey protein occupied an intermediate position between the other two supplements.”

Before you conclude that pea protein provides superior clinical performance compared to whey protein though, it should be noted that the difference was very slight and statistically insignificant:

“The results obtained on biceps brachii showed an increased muscle thickness with pea protein. The effects obtained, although greater than those for whey, do not reach the statistically significant level.”

Why did the two proteins perform similarly? The quote below explains (The term “NUTRALYS®” refers to the brand of pea protein used in the study):

“The lack of statistical difference between NUTRALYS® and whey may be attributed to the quite similar amino acid content but also to the kinetic of digestion. Whey protein has a fast kinetic of digestion, bringing rapidly high concentration of amino-acids in plasma after ingestion, but this effect is transient and returns to resting levels within 2-3 h. NUTRALYS® is an intermediate profile fast protein (unpublished observations) and it can be assumed that the amino acid content in blood plasma would increase quickly after ingestion, making it readily and long lastingly available in the body to participate in muscle protein synthesis.”

Of course, by now you may be thinking that this study does not apply to you since the vast majority of the patients to whom you provide protein supplementation are not young athletes.
like many who participated in this study. Because of this will you see the same results in your patients as seen in this study? Interestingly, not all of the participants were well conditioned. In fact, similar to your patients, some were beginners or individuals who had not done resistance training for several years before the study. How well did the protein supplementation perform under these conditions? The authors state:

“The consumption of pea protein promotes gains in biceps brachii thickness and especially in beginners or people returning to weight training.”

With these results in mind, Babault et al suggest:

“Such proteins should also be of interest in other populations such as the elderly to slow down the aging process and maintain muscle mass.”

**SOME FINAL THOUGHTS**

In terms of clinical performance in relation to gains in muscle mass and overall quality of life, whey protein, based on years of positive research and quality anecdotal reports, has proven its value as a reliable supplemental option for the many patients suffering from quality of life issues relating to loss of muscle mass and function. Unfortunately, in today’s chronically ill population, decreased ability to digest dairy products and increased immunologic reactivity has become more and more common, making whey protein supplementation a less than ideal choice for many. For years, it appeared that, even though we had little proof, pea protein would demonstrate equal performance clinically. Fortunately, we now have proof that our clinical assumptions about pea protein were correct.

However, before you dismiss the idea of ever using whey protein in your practice again, please keep in mind that many of the problems we are seeing with whey protein in terms of digestibility and immunoreactivity are mainly due to long-term overconsumption of dairy products. Now that pea protein has become more ubiquitous in the nutritional marketplace and more and more clinicians are recommending sometimes long term ingestion of pea protein as part of a nutritional maintenance protocol, I am now beginning to hear about select cases where certain patients are now experiencing the same problems in terms of digestibility and immunoreactivity that we typically in the past have just seen with whey. Therefore, I would strongly recommend that, while it may be advisable to initially use pea protein with patients who have a long history of excessive dairy product ingestion, it is also advisable to alternate between pea protein and whey protein for long-term maintenance protocols. For, after a significant period of abstinence, ingestion of whey protein for a short period of time, assuming little or no ingestion of other dairy products, should not only be well tolerated but will provide the variety necessary to avoid the development of digestibility issues and immunoreactivity with pea protein that is likely to develop with long term use.

**Organic Pea Protein Unflavored – 503 g**

**Organic Pea Protein Vanilla – 571 g**

Sweetened with monk fruit extract, a purely sweet, zero glycemic, calorie-free sweetener.

Each jar contains 20 servings with 20 g protein per serving.