



Hot Ingredients for 2015

Currently, there are a number of hot ingredients that represent strong opportunities for growth in the natural product and food sectors, three of which are Turmeric, Pea Protein and Organic Hemp.

According to the American Botanical Council's HerbalGram. Turmeric became the top-selling herbal supplement in the US natural health channel in 2013. Native to Southeast Asia, Turmeric is an herbaceous plant that is actually a member of the ginger family. Turmeric roots are either used fresh or boiled and then dried before being ground into a fine powder.

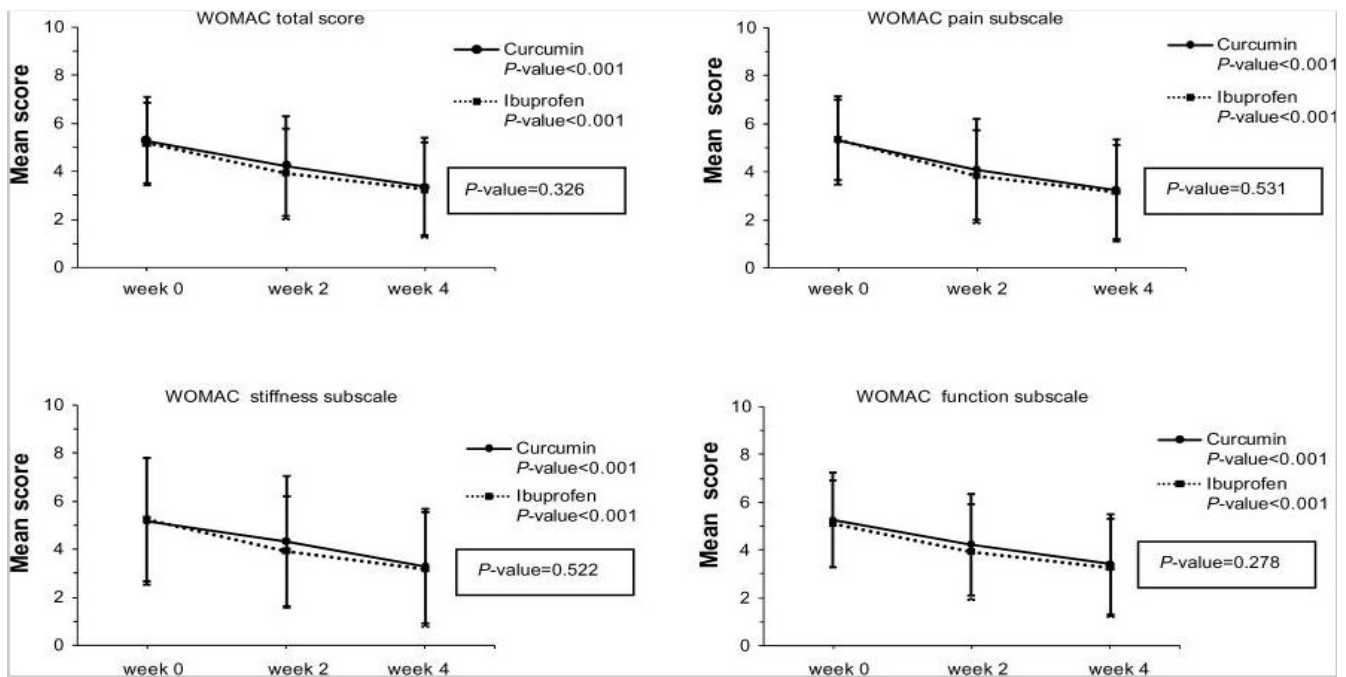


Why is Turmeric so exciting?

Turmeric is increasing in demand with substantial published research and supportive evidence for its unique health properties. The majority of turmeric's research has focused on curcumin, a major component of turmeric (*curcuma longa*), and its role in cancer prevention, arthritis, muscle soreness, metabolic syndrome, and even depression. Additional research on curcumin shows it to be potentially beneficial for prostate health. There is also evidence suggesting curcumin as a contributing factor for maintaining mental health. This amazing compound may even be helpful for gastrointestinal health and maintaining blood sugar levels. In addition to vitamins and minerals, this brightly colored root also contains the essential fatty acids omega-3 and omega-6. These essential fatty acids are not produced by the human body and must be taken through foods such as Turmeric.

Following is a summary of some of the Turmeric research.

According to a 2014 PubMed study conducted at the Cytokine Research Laboratory at The University of Texas, Curcumin has been linked to the prevention and treatment of a wide variety of cancers through modulation of multiple cell signaling pathways [1]. Another PubMed study performed in New Delhi, India, demonstrated the efficacy of Curcumin in potent growth suppressive activity in human breast cancer cells [2]. There are over 115 published studies on PubMed regarding the use of Curcumin for arthritis. In one significant study by Western Ontario and McMaster Universities, Curcumin extracts were as effective as ibuprofen for the treatment of knee osteoarthritis [3]. In the study, 367 primary knee osteoarthritis patients with a pain score of 5 or higher were randomized to receive ibuprofen 1,200 mg per day or curcumin domestica extracts 1,500 mg per day for 4 weeks. As detailed in the following diagram, the Curcumin extracts were as effective as ibuprofen.



WOMAC (Western Ontario and McMaster Universities) Osteoarthritis Index total, WOMAC pain, WOMAC stiffness, and WOMAC function scores at weeks 0, 2, and 4 of both groups using repeated-measures analysis of variance.

NP Nutra's Organic Turmeric is used as a spice in ethnic cuisine as well as an ingredient in many other functional food applications including:

- ◆ Cooking (e.g. curry mixes and sauces)
- ◆ Beverage and smoothie blends
- ◆ Flavor and color component in foods (e.g. mustard)



Pea Protein is set for explosive growth according to Food Navigator USA. Pea protein is a plant protein made from whole dried peas. Providing 9 essential amino acids Pea Protein has exceptional levels of amino acids: Lysine for growth and bone health; branched-chain amino acids (Leucine, Isoleucine, Valine) for energy metabolism; Arginine for muscle metabolism; and Glutamine for nitrogen balance. Lysine is the precursor of Carnitine, which converts fatty acids into energy and helps maintain cholesterol levels. Lysine keeps the immune system in shape and plays a vital role in collagen formation necessary for healthy skin and bones. Pea Protein is ideal for athletes and exercise enthusiasts to help them recover easily after strenuous workouts. It also provides iron and beneficial phenolic compounds with antioxidant properties. Pea protein is a cost-effective protein which may minimize protein sourcing costs.

In a recent, randomized crossover trial at the University of Toronto, Pea Protein lowered blood glucose in healthy young men [4]. It was noted that protein is the component responsible for the short-term effects of yellow peas in the regulation of glycaemia and food intake. The researchers concluded that the use of pea components as a value-added protein ingredient in foods help to improve glycemic control. In the experiment, blood glucose was lower following both protein treatments as compared to control. The following chart details the overall mean blood glucose for the pre- and post-meal periods.

| | Treatment ⁵ | Pre-meal ² (mmol/L) | | Post-meal ³ (mmol/L) | |
|---------------------------|------------------------|--------------------------------|------|---------------------------------|------|
| | | Mean | SE | Mean | SE |
| Experiment 1 ⁴ | C | 5.31 ^a | 0.11 | 6.23 ^a | 0.09 |
| | F10 | 5.12 ^{ab} | 0.07 | 6.37 ^a | 0.09 |
| | F20 | 5.06 ^{ab} | 0.06 | 6.07 ^{ab} | 0.07 |
| | P10 | 4.95 ^b | 0.07 | 6.07 ^{ab} | 0.09 |
| | P20 | 5.05 ^b | 0.06 | 5.95 ^b | 0.09 |
| | P | 0.0253 | | < 0.0001 | |

C, control; F10, 10 g fiber; F20, 20 g fiber; P10, 10 g protein; P20, 20 g protein.

NP Nutra 80% Pea Protein is Organic, gluten-free, lactose-free. It is ideal for vegetarians/vegans and those looking for a superior quality plant-based protein. Pea protein has many functional food and beverage applications including:

- ◆ Nutritional bars
- ◆ Fruit juices
- ◆ Smoothies
- ◆ Confectionery
- ◆ Salad dressings
- ◆ Soups and stews
- ◆ Waffle and pancake mixes
- ◆ Pasta
- ◆ Bread mixes



Organic Hemp is also experiencing strong growth. Organic Hemp is a commodity in high demand, which commands a premium at retail due to the fact that currently there is not enough supply. Hemp is essential for those seeking better health and energy levels. A great source of complete protein, dietary fiber and essential fatty acids, hemp is a nutritional plant-based protein powerhouse that is vegan, gluten-free, and helps to reduce inflammation in the body. Hemp is one of the best sources of easily digestible, high-quality protein. Hemp protein has more globulins (edestin) and albumin which are two of the three most abundant proteins



found in the human body, than any other plant-based source of protein. Unlike soy that contains enzyme inhibitors or phytates, the body better absorbs hemp nutrients. Hemp contains all 21 amino acids including branched-chain amino acids that can provide increased energy and stamina during tough physical activities. Densely nutritious, Hemp Protein Powder is also rich in omega-6 and omega-3, which occur in a 3:1 ratio, as well as both soluble and non-soluble dietary fiber. Hemp is also one of the few sources of the hard-to-get Gamma Linolenic Acid (GLA), which is an important omega-6 essential fatty acid. It also contains good amounts of

magnesium, iron, and zinc. As a by-product, the hemp plant is a renewable green resource for over 50,000 products.

A Department of Human Nutritional Sciences Study at the University of Manitoba, Canada, evaluated the quality of protein from hemp seed products through the use of the protein digestibility-corrected amino acid scores (PDCAAS) method [5]. The results support protein claims for hemp seed products and provides evidence that hemp proteins have a PDCAAS equal to or greater than many grains, nuts, and some pulses. The study also revealed that hemp protein flour had the highest crude protein (CP) content at 41%.

- ◆ Hemp Seed CP: 23.97%
- ◆ Hemp Nuts CP: 35.86%
- ◆ Hemp Protein Flour CP: 40.68%
- ◆ Hemp Hulls CP: 12.65%



NP Nutra Certified Organic Hemp Protein Powder 45% is vegan, gluten free, chemical-free, wheat-free, yeast-free, and non-genetically modified. It contains no sugar, saturated fatty acids, trans fats, cholesterol, and THC. Functional food and beverage applications include:

- ◆ Shakes
- ◆ Smoothies
- ◆ Nutritional blends
- ◆ Baked and prepared foods
- ◆ Salad dressings

For more information on any of these hot ingredients please contact us.



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