Hemp for Hens

Hemp seed is known globally for its use as an excellent skincare ingredient, as well as in human food because it is high in Essential Fatty Acids – the omegas, omega-3, omega-6, omega-9 and GLA, as well as being high in protein that contains all the amino acids.

Legislation from country to country varies and you need to check with your country's legislation before following any tips you may hear.

The seed of Cannabis sativa L. has been an important source of nutrition for thousands of years in Old World cultures. Non-drug varieties of Cannabis, commonly referred to as hemp, have not been studied extensively for their nutritional potential in recent years, nor has hemp seed been utilized to any great extent by the industrial processes and food markets that have developed during the 20th century.

Hemp seed meal is the product that remains after the seed has been crushed and the oil extracted. Hemp seed meal still contains 25% protein and provides an excellent dietary source of fiber for humans and animals. It can be made into hemp milk and cheese, non-dairy ice cream, burgers and anything soy can be made into.

Hemp seed meal can be ground for flour to make breads, pastas or pancakes. The meal can also be used to brew beer.

Hemp Seed Meal is sometimes known as hemp protein flour. This is not the same as hemp protein. Hemp Protein is made from hemp seed meal, which is the by-product of pressing hemp seed oil.

Technically a nut, hemp seed typically contains over 30% oil and about 25% protein, with considerable amounts of dietary fiber, vitamins and minerals.

Hempseed oil is over 80% in polyunsaturated fatty acids (PUFAs), and is an exceptionally rich source of the two essential fatty acids (EFAs) linoleic acid (18:2 omega-6) and alpha-linolenic acid (18:3 omega-3).

The omega-6 to omega-3 ratio (n6/n3) in hempseed oil is normally between 2:1 and 3:1, which is considered to be optimal for animal health. In addition, the biological metabolites of the two EFAs, gamma-linolenic acid (18:3 omega-6; 'GLA') and stearidonic acid (18:4 omega-3; 'SDA'), are also present in hempseed oil.

The two main proteins in hemp seed are edestin and albumin. Both of these high-quality storage proteins are easily digested and contain nutritionally significant amounts of all essential amino acids. In addition, hemp seed has exceptionally high levels of the amino acid

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arginine. Hemp seed has been used to treat various disorders for thousands of years in traditional oriental medicine. Recent clinical trials have identified hempseed oil as a functional food, and animal feeding studies demonstrate the long-standing utility of hempseed as an important food resource.

Recent feeding trials with chickens have confirmed that hemp seed is an excellent source of nutrition for laying hens (chooks), where the omega fatty acid profile in egg was favorably influenced after feeding hemp seed meal (Silversides et al., 2002). This is in agreement with empirical observations over thousands of years in China and other Asiatic nations.

Importance of Hemp seed oil and Hemp seed meal for chickens or laying hens

The hemp seed has a fatty fraction (32- 36%) 7 times greater in comparison to that of maize (5%), it is of good quality and of balanced composition, constituted for 70-75% by a mixture of polyunsaturated fatty acids (fatty acids with long chain - 18 or more carbon's atoms - with two or more double bonds) like the linoleic acid (parent of the series omega 6), the linolenic acid (parent of the series omega 3) and the gammalinolenic acid (irreplaceable, the latter, in the process of synthesis of the prostaglandins, substances regulating the activity of numerous glands, of the muscles and of the neuroreceptors).

It is a valuable source of protein, energy, and long chain fatty acids. Providing hemp seed meal in the diets of laying hens alters the fatty acid composition of the eggs."

Scientific research on hemp seed meal and its impact on laying hens:

Effect of feeding hemp seed and hemp seed oil on laying hen performance and egg yolk fatty acid content: evidence of their safety and efficacy for laying hen diets

Forty-eight 19-wk-old Bovan White laying hens were fed 1 of 5 diets containing either hemp seed (HS) or hemp seed oil (HO). The level of HO was 4, 8, or 12%, whereas the level was 10 or 20% for the HS.

A set of 8 birds fed wheat-, barley-, and corn oil-based diets served as the control.

Performance was monitored over 12 wk. Average hen-day egg production was not affected upon feeding of either HS or HO diets. Egg weight was higher than that of the controls for hens consuming the 20% HS diet ($P < 0.05$).

Feed intake was lower than that of the controls

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for birds consuming the 4% HO diet but similar across other treatments.

Final BW was not affected by diet, with the exception of being lower than that of the controls ($P < 0.05$) in hens consuming the 12% HO diet.

The total egg yolk n-3 fatty acid content increased linearly ($P < 0.05$) with increasing dietary α-linolenic acid provision with the HS- or HO-based diets.

A quadratic response ($P < 0.05$) was observed for docosahexaenoic acid levels in egg yolk in response to increasing dietary α-linolenic acid supply. The expression of hepatic fatty acid desaturase 1 and 2, key genes for the desaturation of long-chain polyunsaturated fatty acids, was significantly decreased (50-60% of controls; $P < 0.05$) as a result of feeding HS or HO diets.

Based on the results from the current study, the inclusion of the hemp products HS or HO in the diets of laying hens up to a maximum level of 20 and 12%, respectively, does not adversely affect the performance of laying hens and leads to the enrichment of the n-3 fatty acid content of eggs.

References:

- http://www.ncbi.nlm.nih.gov/pubmed/22334746 Department of Animal Science, University of Manitoba, Winnipeg, Manitoba R3T 2N2, Canada.
- Journal of Food Science Volume 77, Issue 4, pages S153–S160, April 2012, Fatty Acid Profile and Sensory Characteristics of Table Eggs from Laying Hens Fed Hempseed and Hempseed Oil