

# Increasing Omega-3 Fatty Acids in Eggs from Small Chicken Flocks

Recent research has suggested that people will be healthier and have fewer heart problems if they increase their consumption of omega-3 fatty acids. Traditionally, most of the omega-3 fatty acids in the diet have come from fish and fish oil but many people eat only limited amounts of these foods. Eggs fortified with omega-3 fatty acids offer an alternative method to increase the amount of these fatty acids in your diet.

You can increase the level of omega-3 fatty acids in the eggs that your hens lay by including flaxseed in their feed. The flaxseed contains a type of omega-3 fatty acid called a -linolenic acid and the hen will deposit a significant amount of this dietary fatty acid into the egg yolk. The hen will also convert some of the a -linolenic acid into smaller amounts of other forms of omega-3 fatty acids and deposit them into the egg yolk.

If you include some canola oil or other vegetable oil in the hen's ration, the eggs from your flock will be fortified with omega-6 fatty acids such as linoleic acid. Omega-6 fatty acids have long been associated with improved human health. Canola oil is an excellent source of the omega-6 fatty acids and a modest source of omega-3 fatty acids. Adding some canola oil is also helpful because it helps counter the tendency of the hen to reduce the level of omega-6 fatty acids in the egg when she is fed a high level of flaxseed.

A suggested laying hen ration that will increase the omega-3 fatty acids in the eggs from your hens:

Wheat	40 kg
Oats	15 kg
Layer Supplement	25 kg
Flaxseed	10 kg
Limestone	8 kg
Canola oil	2 kg
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	Total 100 kg



Try Purina® Layena® Plus Omega-3 pellets poultry feed made with whole grain.. It's made with flaxseed, which not only supports a healthy flock, but also provides enhanced nutrients in their eggs. While a typical egg provides a mere 65mg of Omega-3 fatty acids, an egg produced by healthy poultry fed exclusively on Purina® Layena® Plus Omega-3 poultry feed contains 200mg of Omega-3. Plus Omega-3 poultry feed contains no added hormones, antibiotics, animal fat or animal by-products.

Consult your feed supplier for the exact proportion of grain, supplement and limestone (or oyster shell). You must feed this diet for three weeks before omega-3 fatty acids will increase substantially in the eggs.

The grain portion of the hen ration can be made up of wheat, barley or oats. At least half of the grain should be wheat to help counteract some of the sticky compounds in the other grains and flaxseed. Some oats is suggested because it contains more linoleic acid than the other grains. Feeding a quarter of the grain as whole kernels will help the hen to develop a strong, muscular gizzard that can grind the flaxseed for improved release of the oil.

Overfeeding flaxseed can cause problems for your hens because flaxseed contains sticky compounds that stop the hen from digesting some of the nutrients in her diet. Flaxseed also



contains a compound called linoleic that may increase the birds' vitamin requirements. Feeding too much flaxseed can cause production drops, small egg size, reduced body weight gain and thin eggshells. Including 10% flaxseed will increase the omega-3 fatty acids in your eggs and not cause problems for your birds.

Feeding an excess of flaxseed may produce an undesirable egg for you and your family. Too much flaxseed can darken the yolks and leave a fishy taste in the yolk. An excess of flaxseed may increase the omega-3 fatty acids in the egg yolk at the expense of omega-6 fatty acids, which are also beneficial in your diet.

It is recommended that you feed the flaxseed to your hens as whole seeds instead of grinding it up. The fat in flaxseed tends to become rancid quickly once the seed has been ground. Rancid fat can give off flavors in the egg, increase the hens' need for vitamins such as Vitamin E, cause egg production to fall, and most importantly will not increase the omega-3 fatty acid levels in the eggs. Grinding the seed will also produce an oily ration, which tends to stick to your feeders.

Use a commercially prepared supplement, in the correct proportions, to supply the vitamins needed by your hens. Feeding fresh "greens" is not an adequate replacement for a layer supplement.

Cautions:

1) Do not make health claims for your eggs. The total level of omega-3 fatty acids in the eggs will depend on many factors including how efficiently the hens grind the flaxseed, rancidity in the diet, size of the eggs, health status of the hens and level of egg production. Without proper testing, you cannot guarantee a particular level of omega-3 fatty acids in your eggs. Also, your eggs will contain mostly a -linolenic acid and much smaller amounts of the other omega-3 fatty acids.

2) The eggs from your hens will still contain the normal level of cholesterol. A dietician or doctor should be consulted by anyone with a heart condition prior to increasing his or her consumption of eggs.