**Grain Feed vs Grass Feed Beef**

Omega 3 fatty acids are formed in the chloroplasts of green leaves and algae. While seaweeds and algae are the source of omega 3 fatty acids present in fish, grass is the source of omega 3 fatty acids present in grass fed meats. When cattle are taken off omega 3 fatty acid rich grass and shipped to a feedlot to be fattened on omega 3 fatty acid deficient grain, they begin losing their store of this beneficial fat. Each day that an animal spends in the feedlot, the amount of omega 3 fatty acids in its meat is diminished.

The n−6 to n−3 ratio of grass-fed beef is about 2:1, making it a more useful source of n−3 than grain-fed beef, which usually has a ratio of 4:1.

In a 2009 study which was a joint effort between the USDA and researchers at Clemson University in South Carolina grass-fed beef was compared with grain-finished beef and researchers found that grass-fed beef is: higher in moisture content, 42.5% lower total lipid content, 54% lower in total fatty acids, 54% higher in beta-carotene, 288% higher in vitamin E (alpha-tocopherol), higher in the B-vitamins thiamin and riboflavin, higher in the minerals calcium, magnesium, and potassium, 193% higher in total omega-3s, 117% higher in CLA (cis-9 trans-11) which is a potential cancer fighter, 90% higher in vaccenic acid (which can be transformed into CLA), lower in the saturated fats linked with heart disease, and has a healthier ratio of omega-6 to omega-3 fatty acids (1.65 vs 4.84). Protein and cholesterol content were equal.

In most countries, commercially available lamb is typically grass-fed, and thus higher in n−3 than other grain-fed or grain-finished meat sources. In the United States, lamb is often finished (i.e., fattened before slaughter) with grain, resulting in lower n−3.

The omega-3 content of chicken meat may be enhanced by increasing the animals' dietary intake of grains high in n−3, such as flax, chia, and canola.

Kangaroo meat is also a source of n−3, with fillet and steak containing 74 mg per 100g of raw meat.