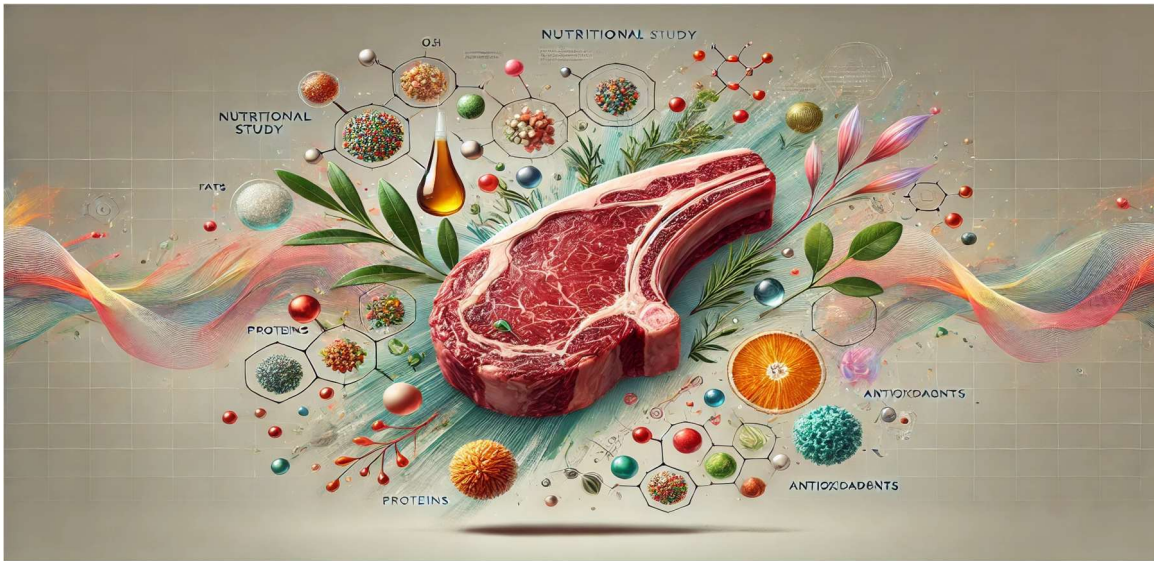


Introduction



The Kinloch Farms report provides an analysis of the nutritional composition of Kinloch Ribeye beef, focusing on its mineral content, fatty acids, macronutrients, and antioxidant properties. By comparing Kinloch Ribeye to Grass-fed and Grain-fed Beef benchmarks, this report offers insights into the nutritional profile of Kinloch Ribeye and how these compare to other beef samples.

Key Findings:

- Kinloch Ribeye shows significantly higher levels of calcium, potassium, and iron compared to both Grass-fed and Grain-fed beef.
- The fatty acid profile of Kinloch includes a strong Omega 6/3 ratio of 1.8. Diets containing low omega 6:3 ratios are associated with improvements in metabolic health. Additionally, studies on grass-fed beef have found that beef with a low omega 6/3 ratio can improve omega-3 levels in consumers.
- Kinloch Ribeye provides a high concentration of protein with a lower fat content relative to Grain-fed beef, ideal for a lean, protein-rich diet.
- Antioxidant compounds, such as 3-Methoxyphenylacetic Acid and Hippuric Acid, are present in higher concentrations, potentially enhancing its anti-inflammatory properties of its beef. For example, hippuric acid is a mammalian antioxidant produced from polyphenols and high levels in the Kinloch samples likely indicate exposure to a polyphenol rich diet by the animals.
- In general, antioxidant concentrations of Kinloch Ribeye were above the grass-fed benchmark. Plant diversity is well correlated with antioxidant concentrations in beef.
- The higher concentrations of zinc and iron in Kinloch Ribeye supports, making it a valuable dietary option for overall health. Additionally, calcium, potassium and magnesium concentrations were above the grass-fed and grain-fed benchmark. Beef is considered a good source of zinc, iron, potassium and magnesium. The fact that these concentrations are higher in the Kinloch samples likely indicating their rich presence in pastures that the animals grazed.

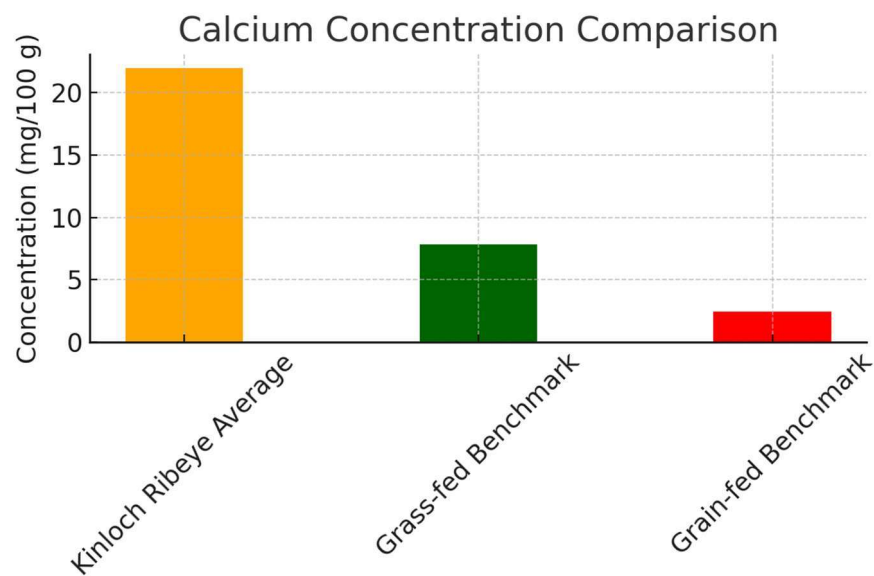
Mineral Concentration Analysis in Kinloch Ribeye

Introduction

This report presents an analysis of essential mineral concentrations in Kinloch Ribeye and compares these values to Grass-fed and Grain-fed Beef benchmarks. The minerals analyzed include Calcium, Potassium, Magnesium, Phosphorus, Sulfur, Iron, Zinc, and Sodium. Each mineral has been assessed for its concentration in Kinloch Ribeye and evaluated against the two benchmarks, with a graph highlighting these comparisons. For each mineral, a summary of findings is provided along with one notable health benefit associated with that mineral.



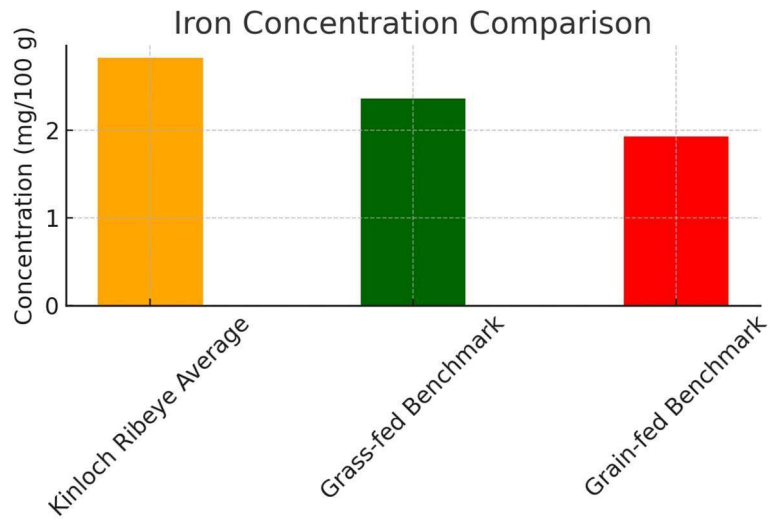
Calcium



The concentration of Calcium in **Kinloch Ribeye** is 21.97 mg/100 g. Compared to Grass-fed Beef Benchmark (7.85 mg/100 g) and Grain-fed Beef Benchmark (2.48 mg/100 g), **Kinloch Ribeye** displays a calcium mineral content.

Health Benefit: Supports bone health and strength, essential for preventing osteoporosis.

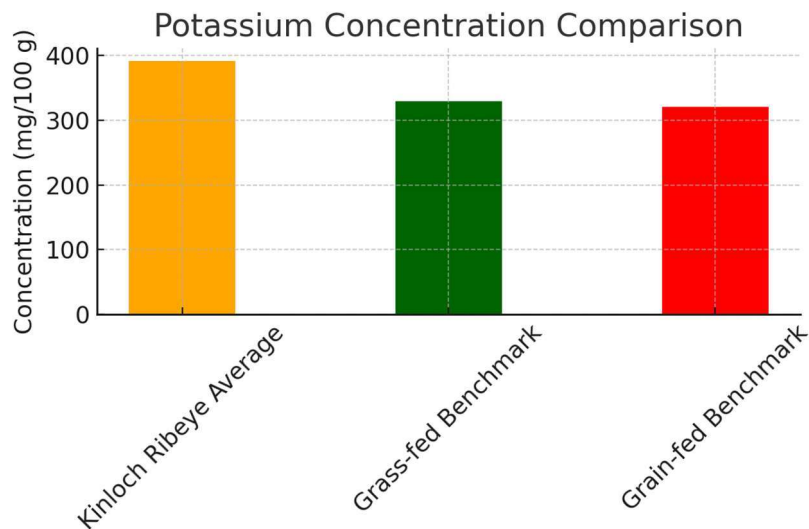
Iron



The concentration of Iron in **Kinloch Ribeye** is 2.83 mg/100 g. Compared to Grass-fed Beef Benchmark (2.36 mg/100 g) and Grain-fed Beef Benchmark (1.93 mg/100 g), **Kinloch Ribeye** displays a higher content.

Health Benefit: Important for oxygen transport in blood, reducing the risk of anemia.

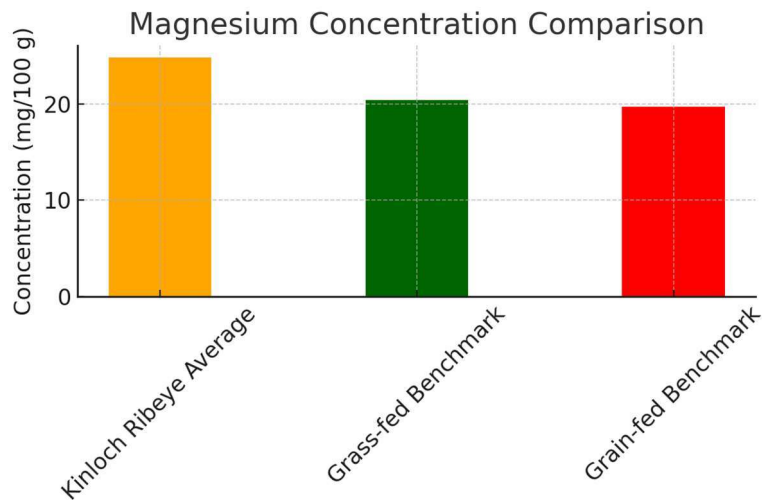
Potassium



The concentration of Potassium in **Kinloch Ribeye** is 392.07 mg/100 g. Compared to Grass-fed Beef Benchmark (329.61 mg/100 g) and Grain-fed Beef Benchmark (320.65 mg/100 g), **Kinloch Ribeye** displays a higher mineral content.

Health Benefit: Helps regulate blood pressure by balancing sodium levels, supporting heart health.

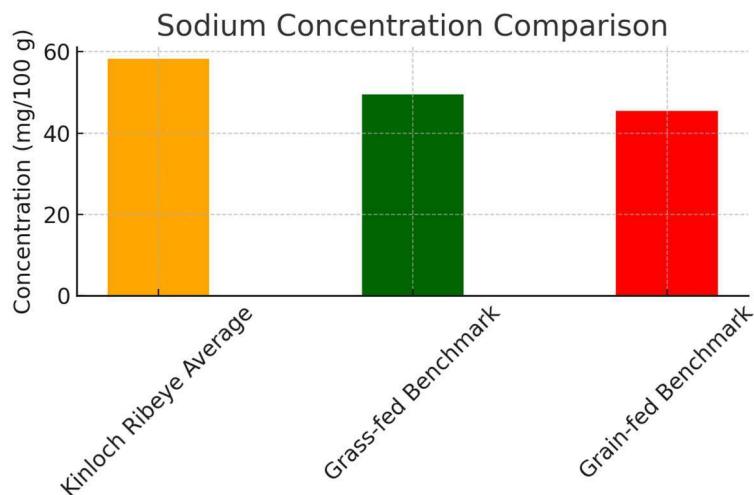
Magnesium



The concentration of Magnesium in **Kinloch Ribeye** is 24.85 mg/100 g. Compared to Grass-fed Beef Benchmark (20.39 mg/100 g) and Grain-fed Beef Benchmark (19.74 mg/100 g), **Kinloch Ribeye** displays a higher mineral content.

Health Benefit: Involved in muscle and nerve function, critical for maintaining normal heart rhythm.

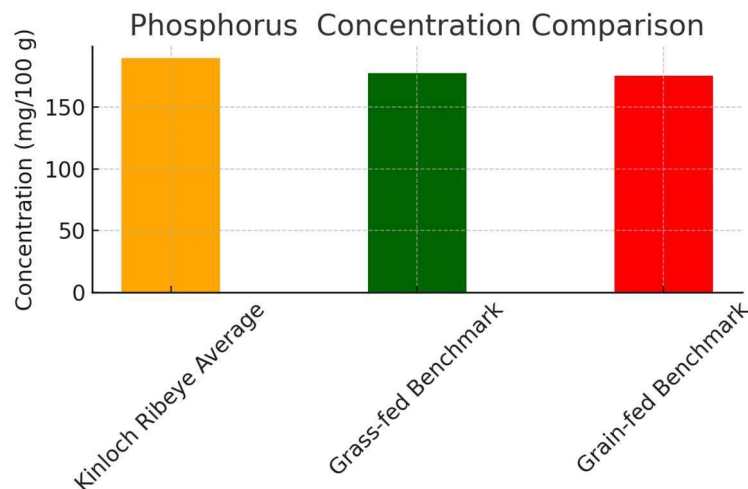
Sodium



The concentration of Sodium in **Kinloch Ribeye** is 58.35 mg/100 g. Compared to Grass-fed Beef Benchmark (49.52 mg/100 g) and Grain-fed Beef Benchmark (45.40 mg/100 g), **Kinloch Ribeye** displays a higher mineral content.

Health Benefit: Maintains fluid balance and supports nerve function, though intake should be moderated.

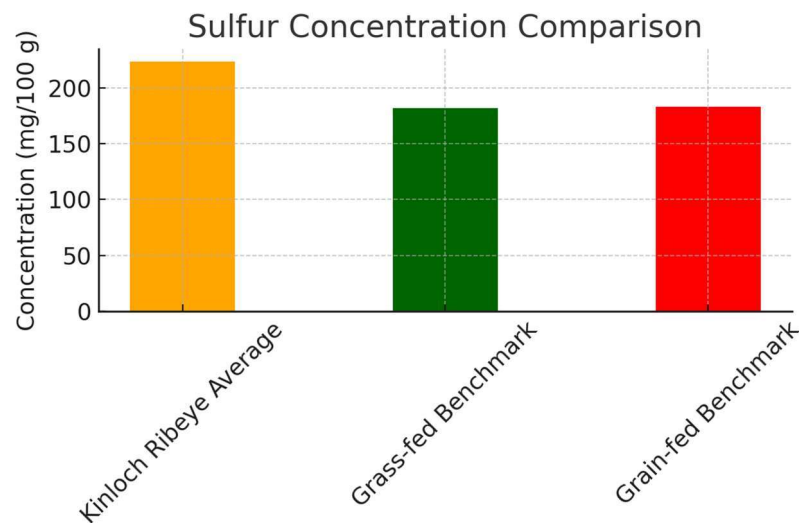
Phosphorus



The concentration of Phosphorus in **Kinloch Ribeye** is 189.72 mg/100 g. Compared to Grass-fed Beef Benchmark (177.28 mg/100 g) and Grain-fed Beef Benchmark (175.23 mg/100 g), **Kinloch Ribeye** displays a higher mineral content.

Health Benefit: Phosphorus supports healthy bones and teeth by helping form and maintain their structure, and it plays a vital role in energy metabolism.

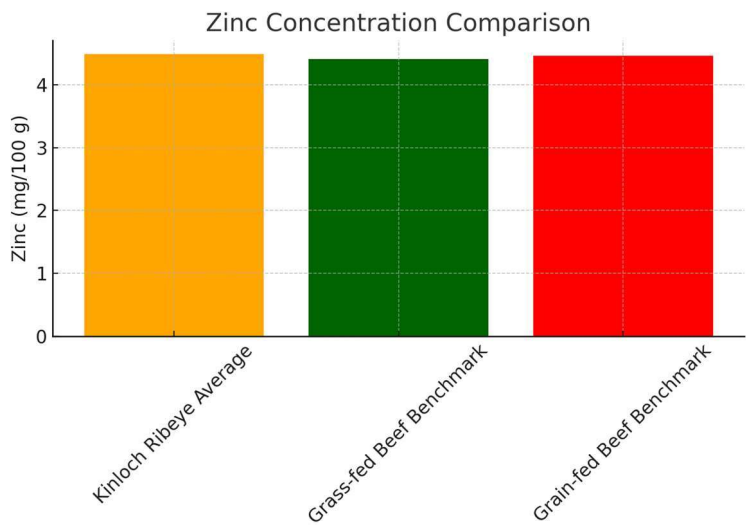
Sulfur



The concentration of Sulfur in **Kinloch Ribeye** is 223.66 mg/100 g. Compared to Grass-fed Beef Benchmark (181.75 mg/100 g) and Grain-fed Beef Benchmark (183.03 mg/100 g), **Kinloch Ribeye** displays a higher mineral content.

Health Benefit: Contributes to protein synthesis, supporting skin, hair, and nail health.

Zinc



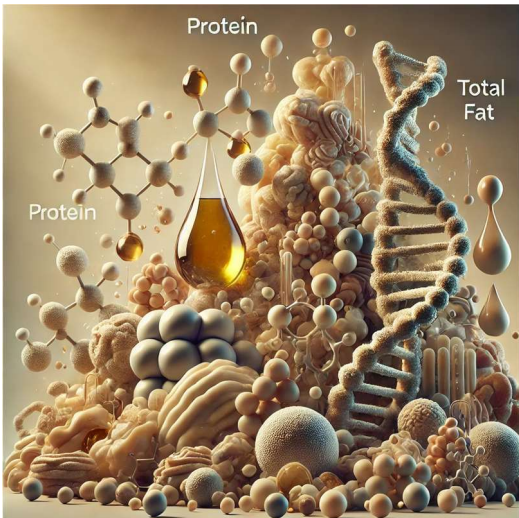
The concentration of Zinc in **Kinloch Ribeye** is 4.49 mg/100 g. Compared to Grass-fed Beef Benchmark (4.41 mg/100 g) and Grain-fed Beef Benchmark (4.47 mg/100 g), **Kinloch Ribeye** displays a higher mineral content.

Health Benefit: Plays a vital role in immune system function.

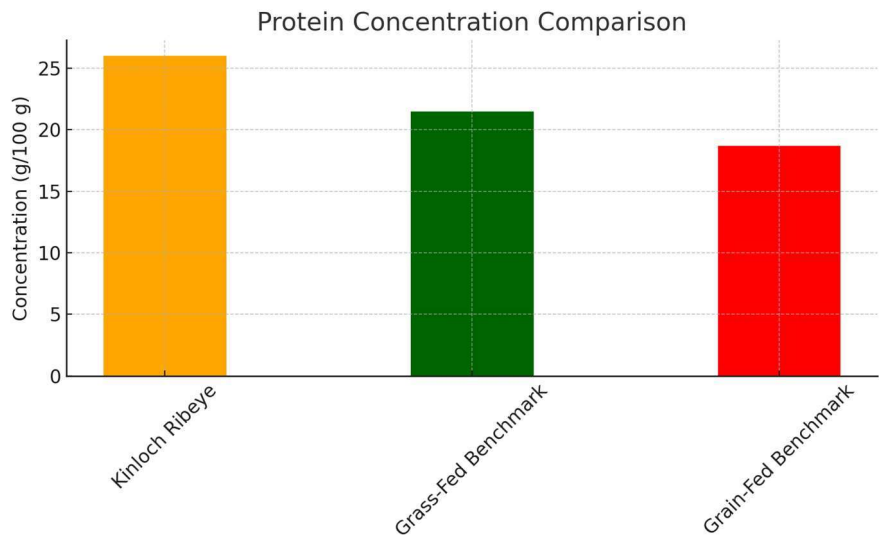
Macronutrient Analysis: Protein and Total Fat in Kinloch Ribeye

Introduction

This report presents an analysis of two key macronutrients—Protein and Total Fat—in Kinloch Ribeye, compared to Grass-Fed and Grain-Fed Beef benchmarks. The data highlights the nutrient composition of Kinloch Ribeye, providing insights into its nutritional value relative to typical beef benchmarks. The findings can help assess the dietary benefits of Kinloch Ribeye as part of a balanced nutrition plan.

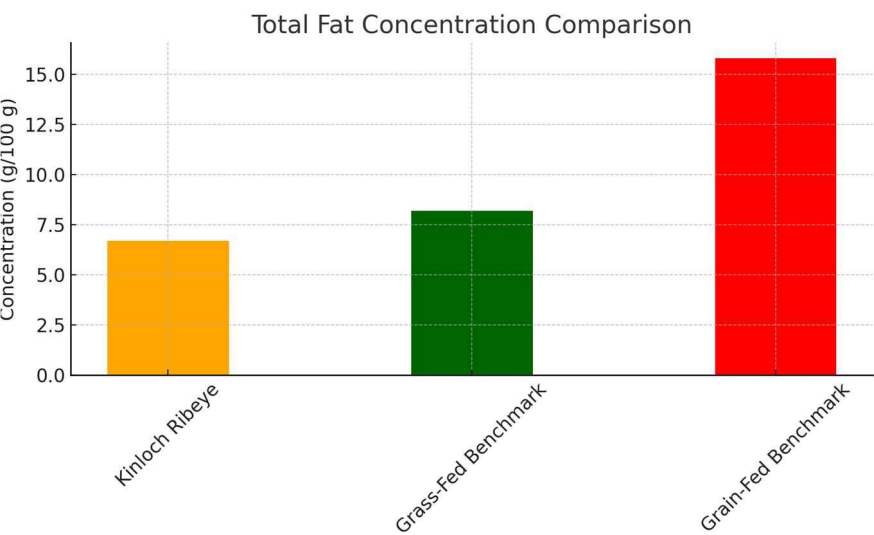


Protein



The protein concentration in **Kinloch Ribeye** is 26.0 g/100 g. In comparison, the Grass-Fed Benchmark is 21.5 g/100 g, and the Grain-Fed Benchmark is 18.7 g/100 g. **Kinloch Ribeye** exhibits a higher protein content than both benchmarks, suggesting it as a robust source of dietary protein, beneficial for muscle maintenance and growth. The reason why the Kinloch Ribeye samples are higher in protein is because they are lower in fat and the two are typically inversely related.

Total Fat



The total fat concentration in **Kinloch Ribeye** is 6.7 g/100 g. Compared to this, the Grass-Fed Benchmark is 8.2 g/100 g, and the Grain-Fed Benchmark is 15.8 g/100 g. While **Kinloch Ribeye** has a slightly lower fat content than the Grass-Fed Benchmark, it contains significantly less fat than the Grain-Fed Benchmark. This indicates **Kinloch Ribeye** may be a suitable option for those seeking a protein-rich, lower-fat red meat option.

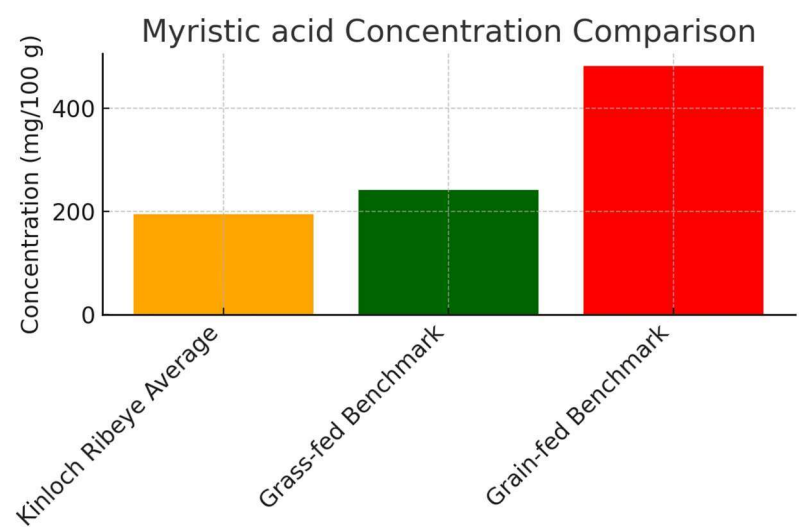
Fatty Acids and Omega Concentration Analysis in Kinloch Ribeye

Introduction

This report presents an analysis of essential fatty acids and omega categories in Kinloch Ribeye, compared to Grass-fed and Grain-fed Beef benchmarks. The analysis includes concentrations of prominent fatty acids such as Palmitic acid, Stearic acid, Oleic acid, Linoleic acid, Alpha Linolenic acid, Gondoic Acid, and total Omega categories. Each compound's concentration is highlighted in comparison to industry benchmarks to provide a comprehensive understanding of Kinloch Ribeye's nutritional profile in relation to these benchmarks.

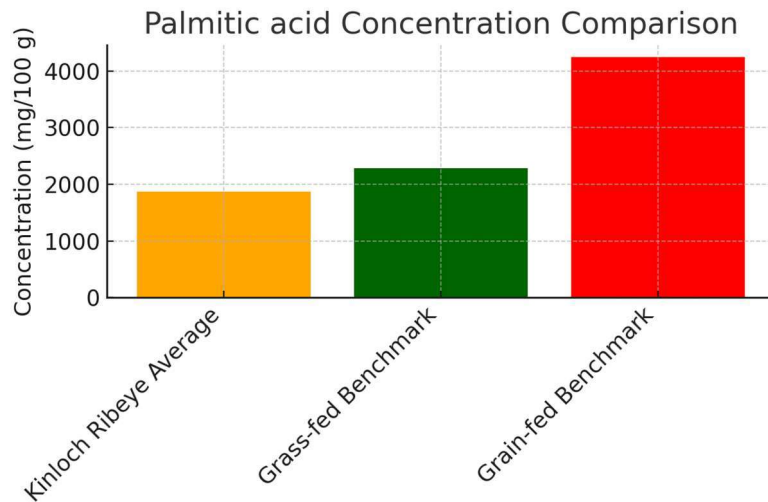


Myristic acid



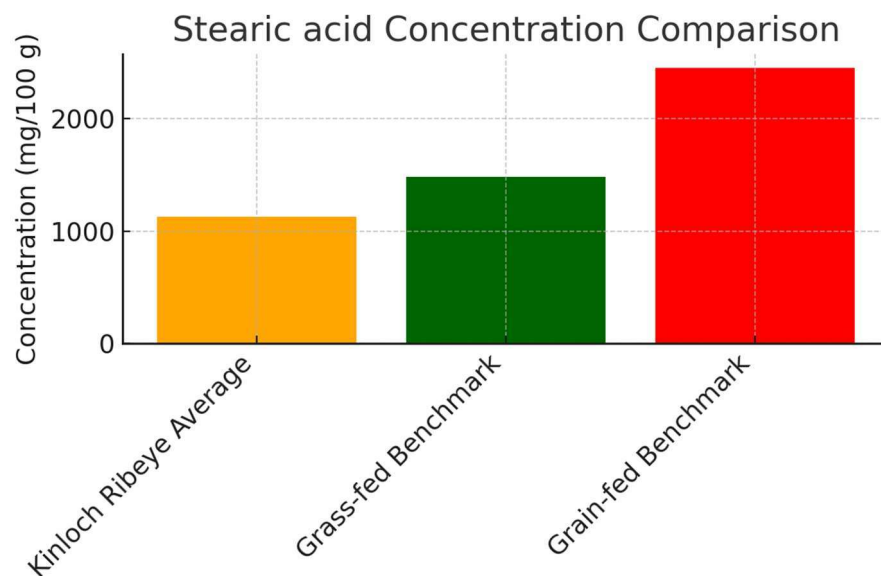
The concentration of Myristic acid in **Kinloch Ribeye** is 194.84 mg/100 g. Compared to Grass-fed Beef Benchmark (241.56 mg/100 g) and Grain-fed Beef Benchmark (481.64 mg/100 g), **Kinloch Ribeye** displays a comparable nutritional profile to grass-fed beef.

Palmitic acid



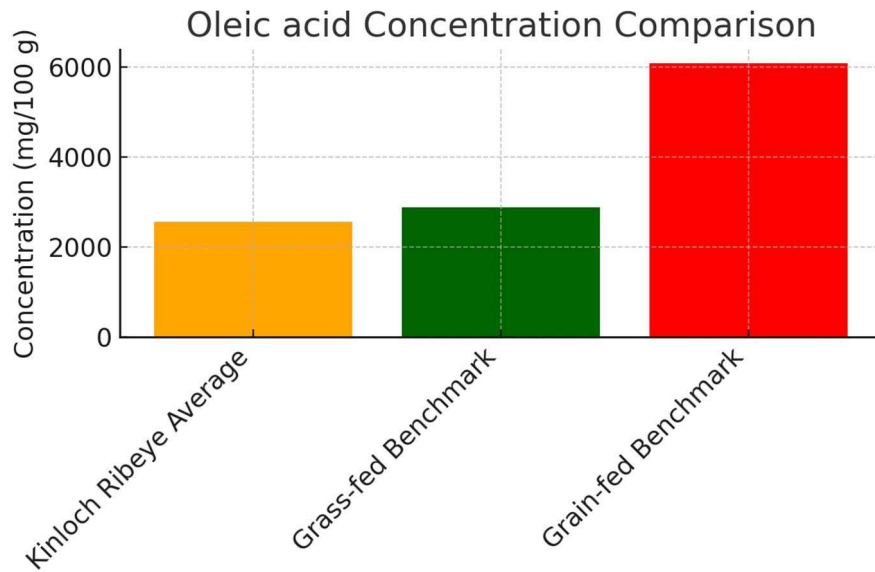
The concentration of Palmitic acid in **Kinloch Ribeye** is 1862.41 mg/100 g. Compared to Grass-fed Beef Benchmark (2286.72 mg/100 g) and Grain-fed Beef Benchmark (4246.70 mg/100 g), **Kinloch Ribeye** has less palmitic acid.

Stearic acid



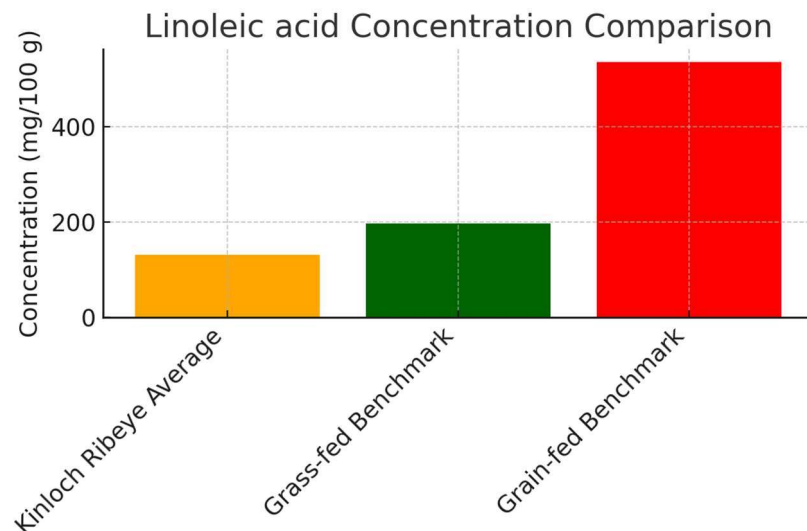
The concentration of Stearic acid in **Kinloch Ribeye** is 1125.27 mg/100 g. Compared to Grass-fed Beef Benchmark (1481.14 mg/100 g) and Grain-fed Beef Benchmark (2455.37 mg/100 g), **Kinloch Ribeye** has less stearic acid. The reason why stearic, myristic, and palmitic, three saturated fatty acids are low, is because the Kinloch Ribeye samples are leaner than the benchmarks and contain less saturated fat.

Oleic acid



The concentration of Oleic acid in **Kinloch Ribeye** is 2560.16 mg/100 g. Compared to Grass-fed Beef Benchmark (2878.18 mg/100 g) and Grain-fed Beef Benchmark (6089.50 mg/100 g), **Kinloch Ribeye** displays a comparable nutritional profile to Grass-fed beef. Grain-fed beef is known to be higher in oleic acid as a result of total mixed ration feeding.

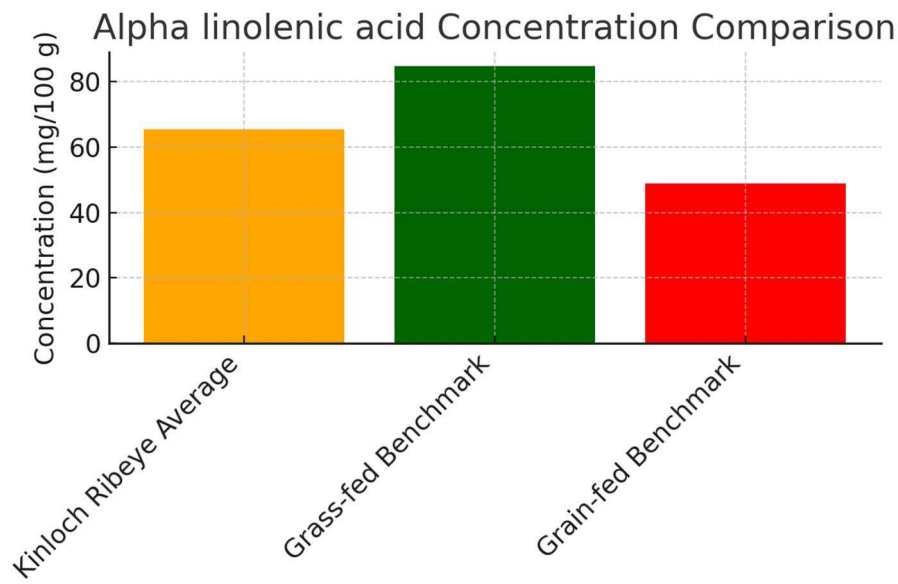
Linoleic acid



The concentration of Linoleic acid in **Kinloch Ribeye** is 131.61 mg/100 g. Compared to Grass-fed Beef Benchmark (196.65 mg/100 g) and Grain-fed Beef Benchmark (535.56 mg/100 g), **Kinloch Ribeye** displays a much lower linoleic acid (omega-6 Polyunsaturated acid) than Grain-fed beef.

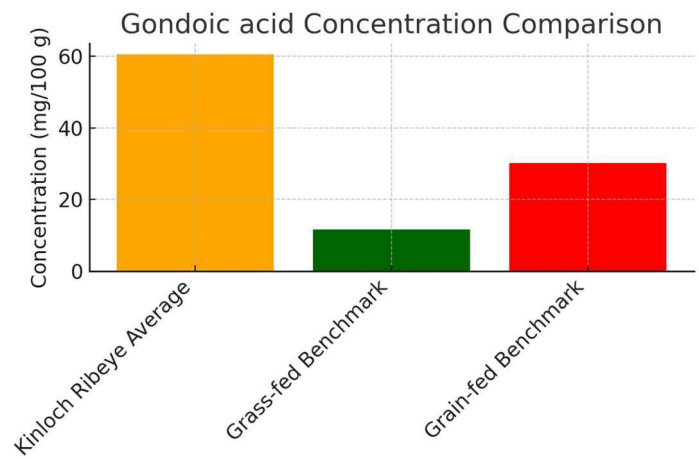
This indicates that Kinloch Ribeye is low in omega-6 fatty acids. Excess intakes of omega-6 fatty acids can be problematic in the context of a Western Diet, which tends to be high in omega-6 fatty acids.

Alpha linolenic acid



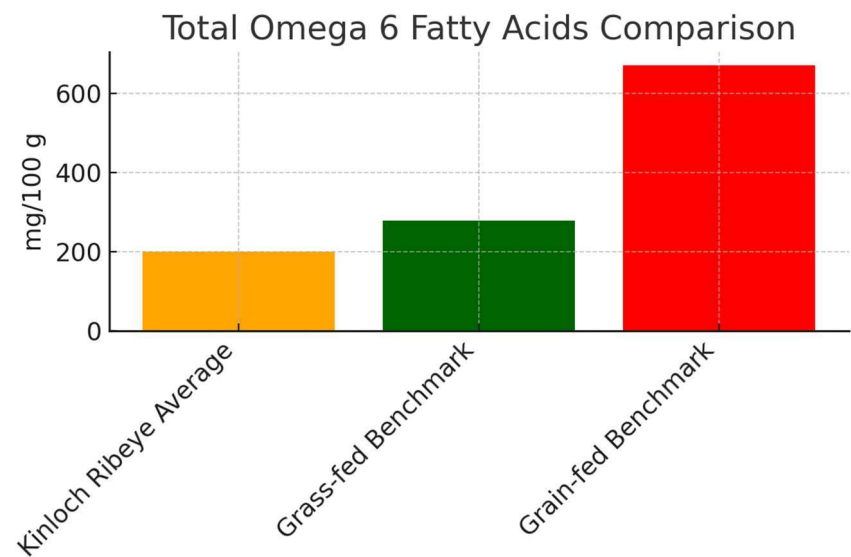
The concentration of Alpha linolenic acid in **Kinloch Ribeye** is 65.47 mg/100 g. Compared to Grass-fed Beef Benchmark (84.92 mg/100 g) and Grain-fed Beef Benchmark (48.99 mg/100 g), **Kinloch Ribeye** displays a higher nutritional profile than Grain-fed beef. ALA is rich in forages but low in grain-based rations explaining the difference between the grass-fed Kinloch Ribeyes and the grain-fed samples. The absolute concentrations between Kinloch and the Grass-fed Benchmark is because the Kinloch samples tended to be leaner.

Gondoic acid



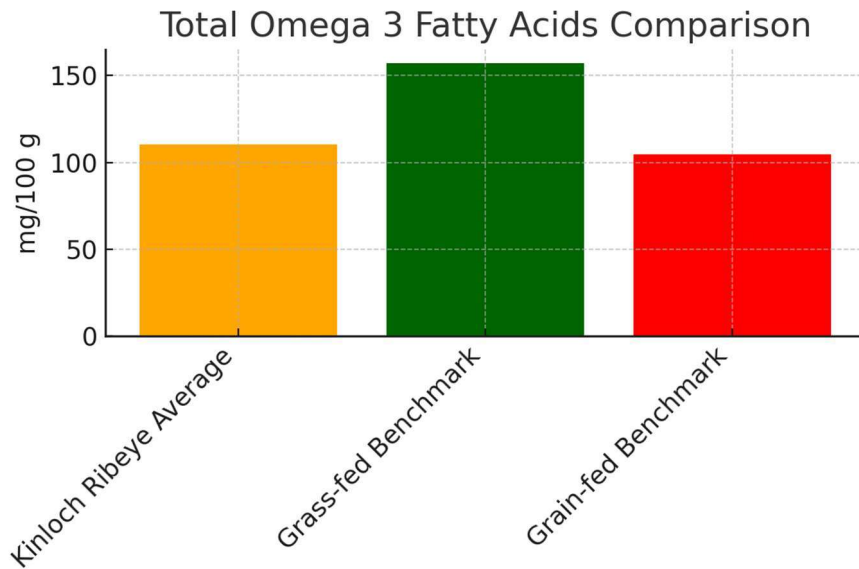
The concentration of Gondoic acid in **Kinloch Ribeye** is 60.55 mg/100 g, higher than both Grass-fed Beef Benchmark (11.58 mg/100 g) and Grain-fed Beef Benchmark (30.22 mg/100 g). As a monounsaturated fat, it may help lower bad (LDL) cholesterol and support cardiovascular health when being consumed in moderation.

Total Omega 6 Fatty Acids



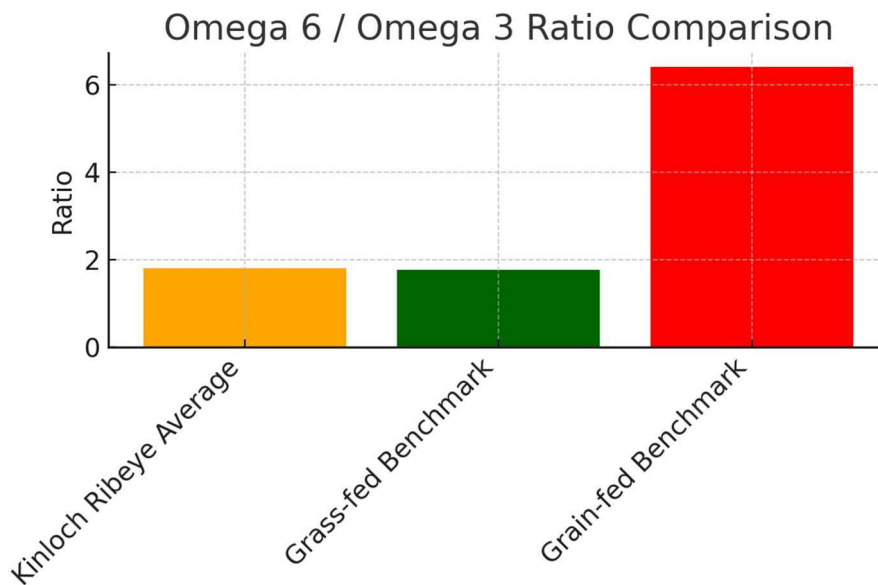
The concentration of Total Omega 6 Fatty Acids in **Kinloch Ribeye** is 199.09 mg/100 g. Compared to Grass-fed Beef Benchmark (278.09 mg/100 g) and Grain-fed Beef Benchmark (670.71 mg/100 g), **Kinloch Ribeye** displays a comparable nutritional profile to the Grass-fed Beef Benchmark. This indicated that the Kinloch Ribeye samples are low in omega-6s.

Total Omega 3 Fatty Acids



The concentration of Total Omega 3 Fatty Acids in **Kinloch Ribeye** is 110.38/100 g. Compared to the Grain-fed Beef Benchmark (104.56 mg/100g), **Kinloch Ribeye** displays a higher nutritional profile.

Total Omega 6 / Omega 3 Ratio



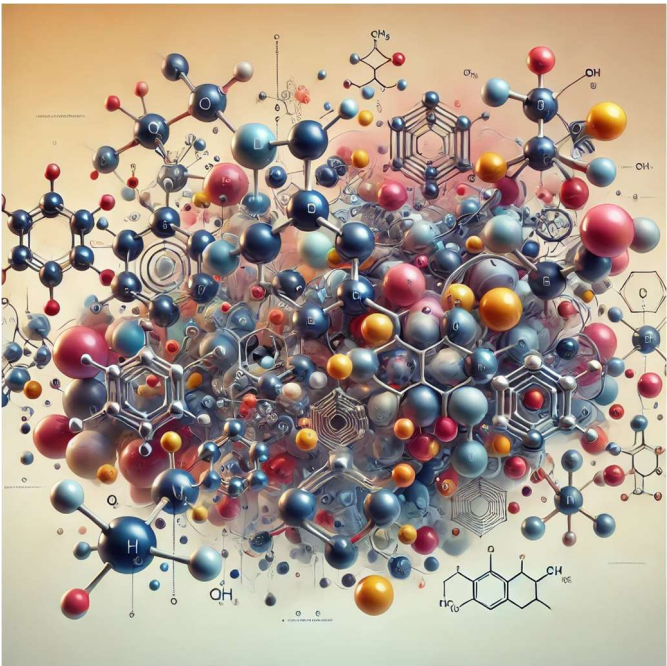
The concentration of Total Omega 6 / Omega 3 Ratio in **Kinloch Ribeye** is 1.8, which is in line with high-quality grass-fed beef, which is, on average also 1.8. In contrast, the average omega 6:3 ratio in grain-fed beef is 6.4, indicating **Kinloch Ribeye** samples have a 3.5-fold improved ratio compared to the grain-fed beef.

Antioxidant Content Analysis

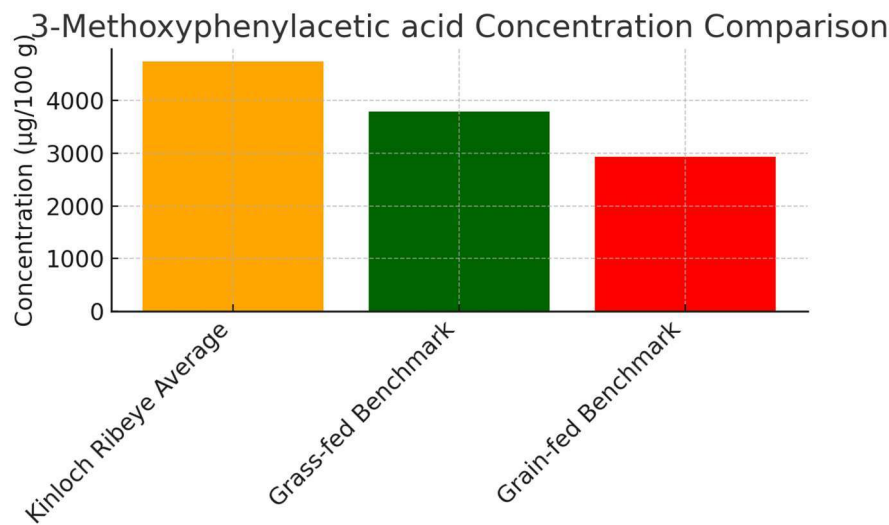
Introduction

This report provides a detailed analysis of antioxidant compounds in **Kinloch Ribeye**, comparing concentrations to Grass-fed and Grain-fed beef benchmarks. Antioxidants are critical in neutralizing free radicals, reducing oxidative stress, and supporting overall cellular health. These compounds play a key role in promoting longevity and resilience against chronic diseases, with implications for immune function, cardiovascular health, and metabolic stability.

By examining specific antioxidants, this analysis aims to highlight the unique composition of **Kinloch Ribeye** and its potential health benefits. Each compound's concentration has been assessed to provide a clear comparison with standard benchmarks, identifying areas where **Kinloch Ribeye** may offer superior antioxidant properties. This data supports an evidence-based approach to understanding the nutritional value of **Kinloch Ribeye** in relation to antioxidant capacity.

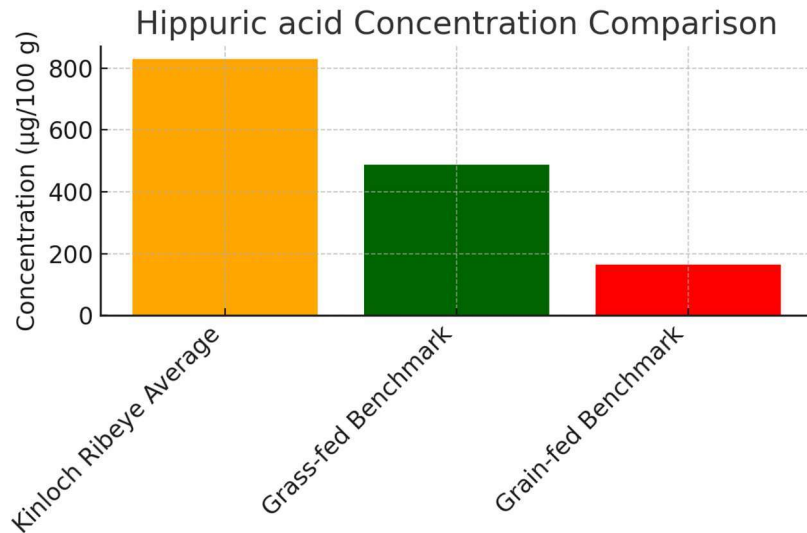


3-Methoxyphenylacetic Acid



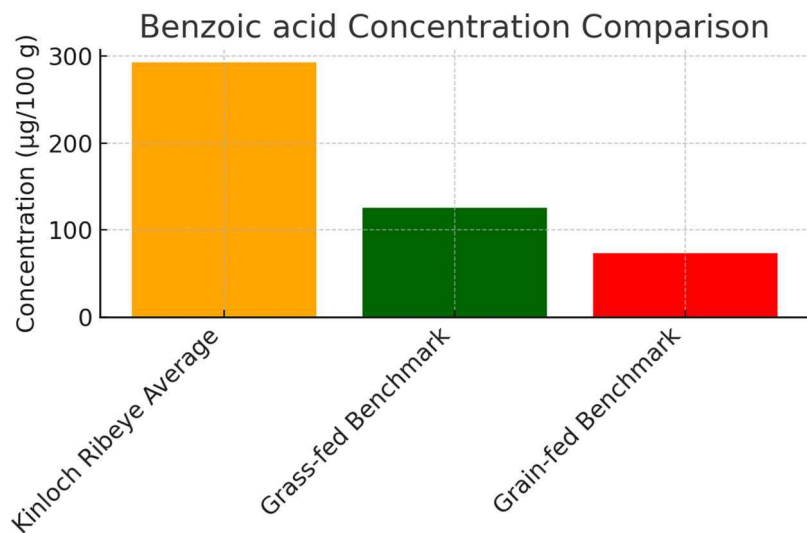
At 4,744 ug/100 g, **Kinloch Ribeye** contains significantly more 3-Methoxyphenylacetic acid than both Grass-fed (3,786 ug/100 g) and Grain-fed (2,932 ug/100 g) benchmarks. This compound supports a role in neurological and metabolic health.

Hippuric Acid



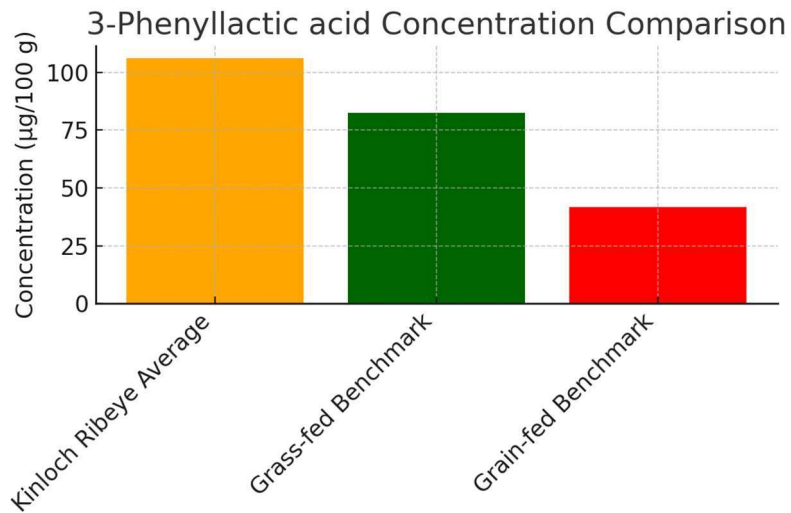
Kinloch Ribeye's Hippuric Acid level (830 ug/100 g) is almost double that of Grass-fed (489 ug/100 g) and much higher than Grain-fed (165 ug/100 g). This compound is considered a good biomarker of phenolic intake and rises in mammals that consume diets rich in phytochemicals. In healthy humans without kidney disease, this compound is associated with lower odds of metabolic diseases.

Benzoic Acid



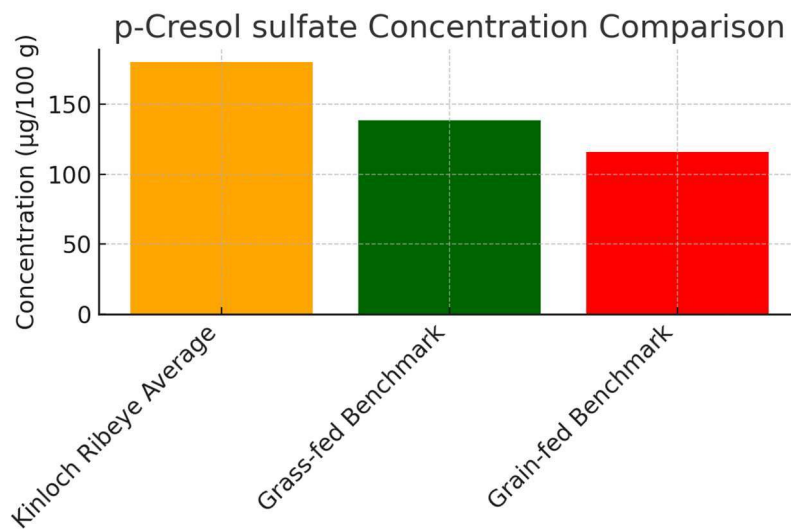
Benzoic Acid in **Kinloch Ribeye** (293 ug/100 g) exceeds both Grass-fed (125 ug/100 g) and Grain-fed (74 ug/100 g). This compounds supports antimicrobial benefits and potential shelf-life extension.

3-Phenyllactic Acid



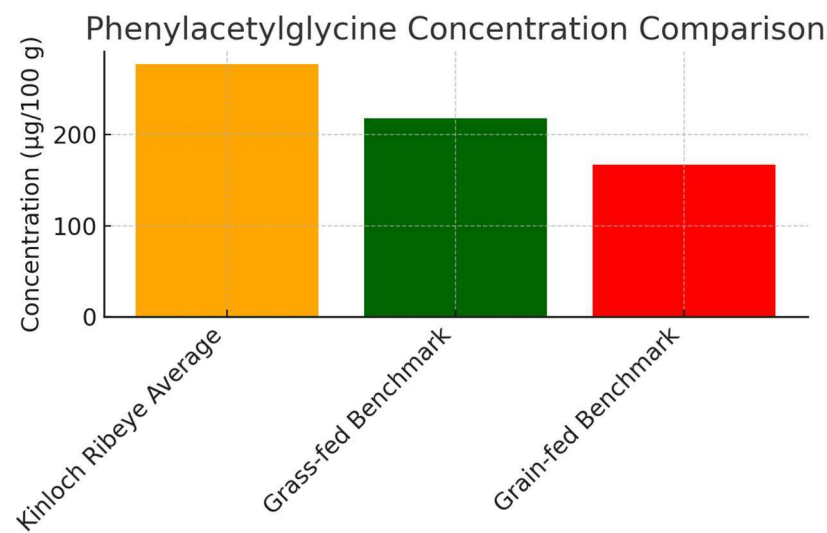
Kinloch Ribeye (106 ug/100 g) contains more 3-Phenyllactic Acid than Grass-fed (82 ug/100 g) and Grain-fed (42 ug/100 g). This compound is known to contribute to gut health through antimicrobial properties.

p-Cresol Sulfate



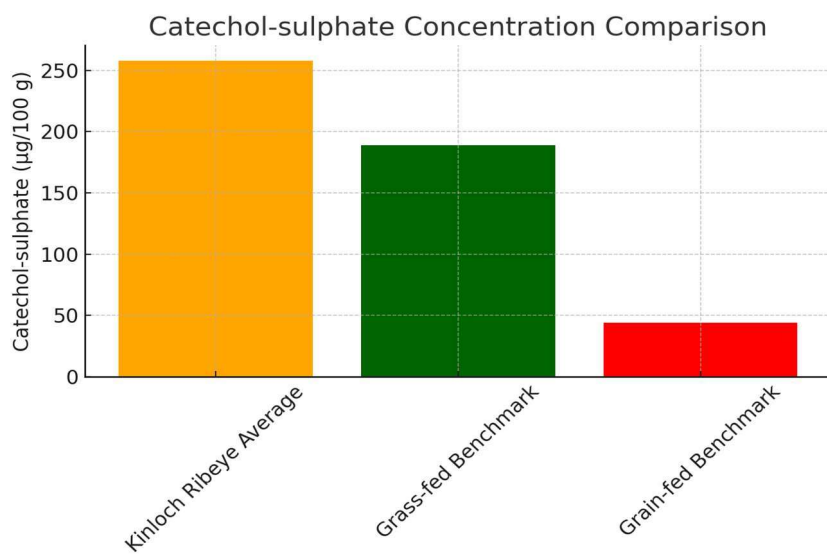
Kinloch Ribeye has 180 ug/100 g of p-Cresol Sulfate, higher than Grass-fed (139 ug/100 g) and Grain-fed (116 ug/100 g). This compound can also rise as a result of higher polyphenol intake and is produced by gut microbiota.

Phenylacetylglycine



Phenylacetylglycine in **Kinloch Ribeye** (278 ug/100 g) exceeds Grass-fed (218 ug/100 g) and Grain-fed (167 ug/100 g) levels. This compound is associated with potential metabolic and cardiovascular benefits.

Catechol-Sulfate



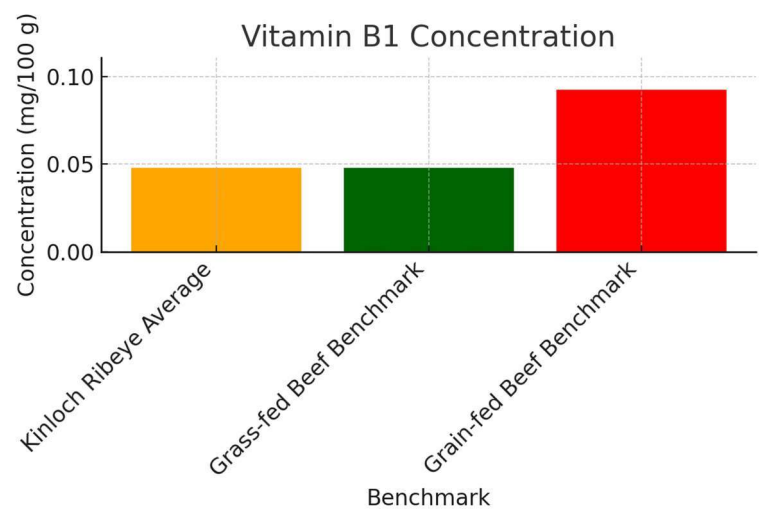
Kinloch Ribeye's Catechol-Sulphate level (258 ug/100 g) is higher than Grass-fed (189 ug/100 g) and Grain-fed (44 ug/100 g). This compound can potentially enhancing oxidative defense through antioxidant properties.

Vitamin Content Analysis

Introduction

This section presents an analysis of vitamin concentrations in ribeye samples, comparing the Kinloch Ribeye Average to two benchmarks: Grass-fed Beef and Grain-fed Beef. The focus is on essential nutrients such as B vitamins, Choline, and Betaine, which play vital roles in energy production, neurological function, liver health, and cellular hydration. By evaluating how these nutrients vary across different feeding practices, this report provides insights into the potential health contributions of each source.

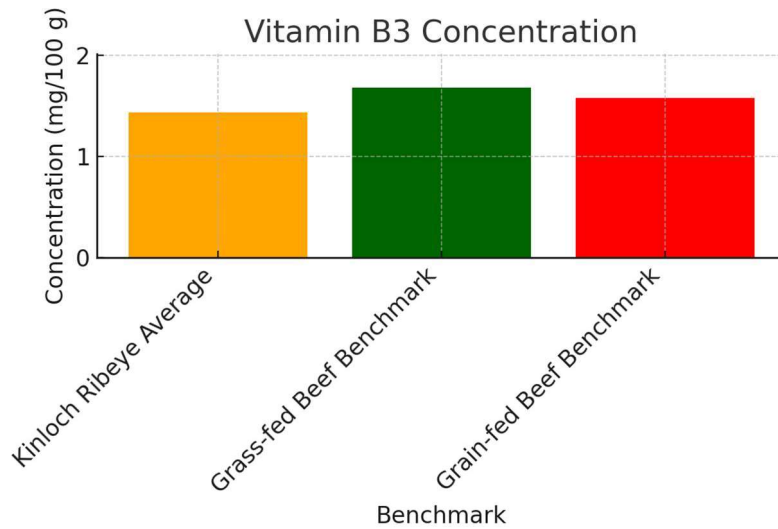
Vitamin B1 Concentration



Vitamin B1 levels are highest in the Grain-fed benchmark (0.09 mg/100g) compared to the Kinloch Ribeye average (0.05 mg/100g) and the Grass-fed Beef benchmark (0.05 mg/100g). Thiamin tends to be higher in grains, which explains why this compound is higher in grain-fed beef

Health Benefit: Essential for energy production and nerve function.

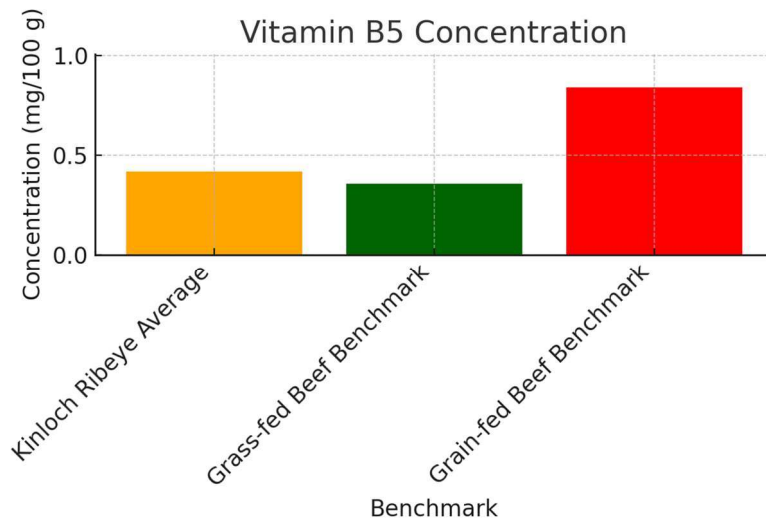
Vitamin B3 Concentration



Vitamin B3 concentration is consistent across all benchmarks and samples, with the Grass-fed Beef benchmark having a marginally higher level than the **Kinloch Ribeye**.

Health Benefit: Important for cellular energy production and DNA repair.

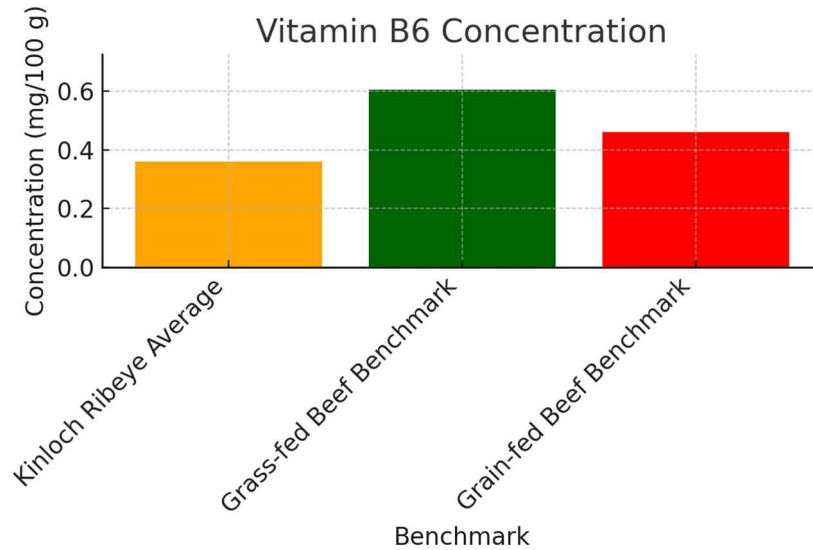
Vitamin B5 Concentration



The Grain-fed Beef benchmark shows a higher concentration of Vitamin B5 compared to the other groups. Kinloch Ribeye has similar but slightly higher levels than the Grass-fed Beef benchmark. Grains are higher in Vitamin B5, which explains why grain-fed beef contains higher levels.

Health Benefit: Vital for synthesizing coenzyme A, necessary for fatty acid metabolism.

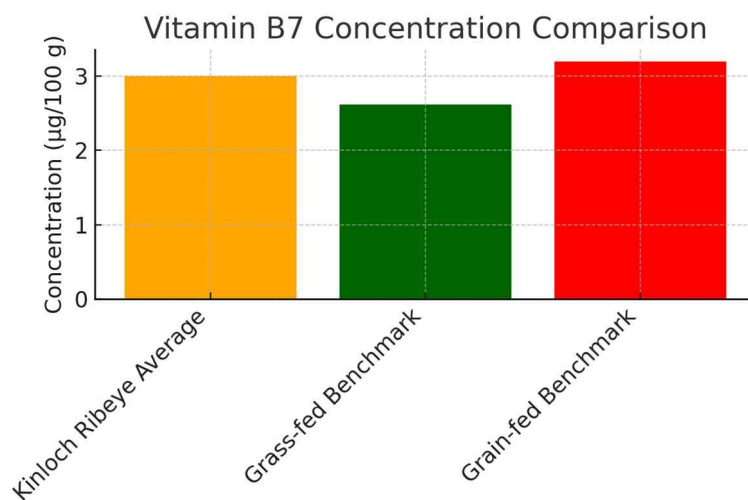
Vitamin B6 Concentration



Vitamin B6 concentrations were lower in the **Kinloch Ribeye** samples(0.36 mg/100 g). Vitamin B6 concentration is highest in the Grass-fed Beef benchmark (0.61 mg/100 g), followed by the Grain-fed benchmark (0.46 mg/100 g).

Health Benefit: Involved in amino acid metabolism and red blood cell formation.

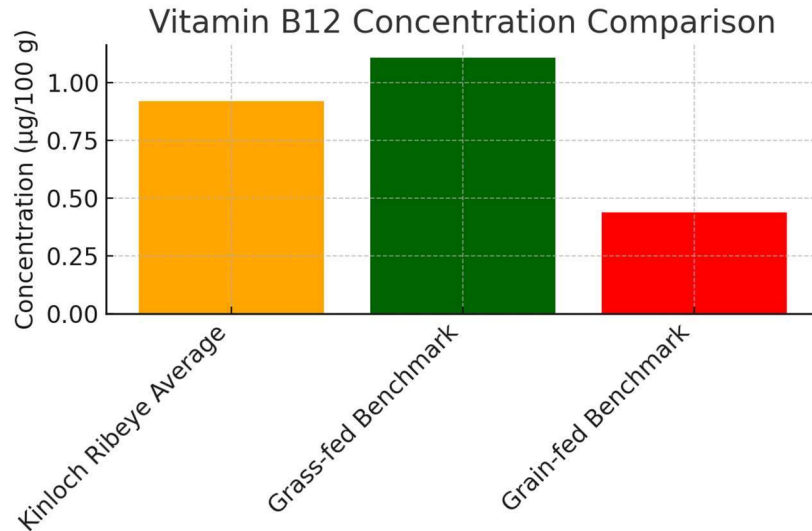
Vitamin B7 Concentration



The **Kinloch Ribeye** samples are a good source of Vitamin B7.

Health Benefit: Promotes healthy skin, hair, and nail growth.

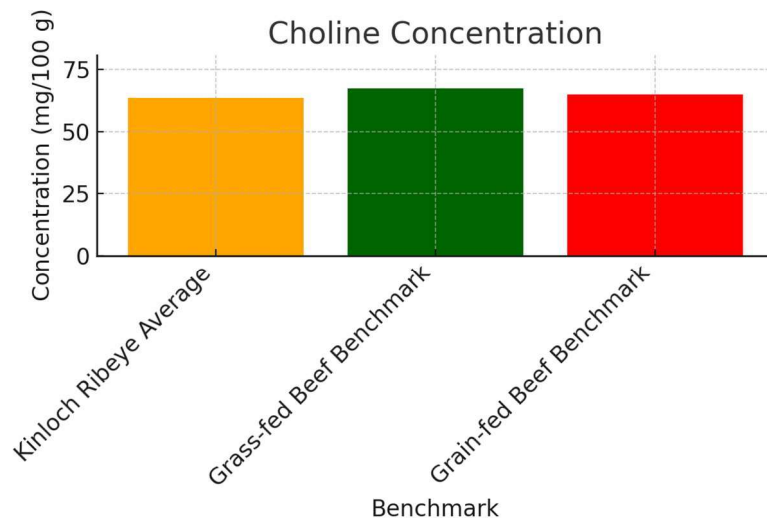
Vitamin B12 Concentration



The Kinloch has a close concentration of B12 concentration of 0.92 ug/100g comparable to the Grass-fed beef while being twice as high as grain-fed beef.

Health Benefit: Essential for red blood cell formation and neurological function.

Choline Concentration



Choline concentration is consistent across all the benchmarks and samples, showing only minor differences. Beef is considered a good source of choline in general.

Health Benefit: Important for brain development and liver function.