



Nutritional Comparison of mealworms (*Tenebrio molitor*) and the common house fly (*Musca Domestica*)

- *Musca domestica* has higher protein, higher fiber, higher ash content and lower fat than mealworms.
- *Musca domestica* has nearly five times the calcium, higher iron, zinc, copper and manganese than mealworms.
- A calcium to phosphorus ratio of 1:1 is best for birds. The ratio for *Musca domestica* is 1:3.4 versus mealworms at 1:13.5.
- Studies have shown that broiler chicken performance was positively influenced by the optimal amino acid profile. *Musca domestica* offers a positive amino acid profile via high protein (63.99%) and essential amino acid content (29.46%) and high protein digestibility (98.50%). The amino acid profile of mealworms, by comparison, is lacking (see chart below).
- My Pet Chicken's *Musca domestica* is grown and processed entirely in the United States; mealworms are most often imported from China and only packaged in the US.
- Many My Pet Chicken *Musca domestica*-based products are mixed with other key ingredients to further enhance the nutritional value, including rendered beef kidney suet, corn, wheat, alfalfa, flax, kelp, spirulina and oyster shell. These ingredients add significant nutrition to the average poultry diet.

Nutritional Analysis

| | <i>Musca domestica (common housefly)</i> | <i>Tenebrio molitor (mealworm)</i> |
|----------------|--|------------------------------------|
| Protein | 63.1% | 49.6% |
| Fat | 15.5% | 27.2% |
| Fiber | 3.4% | 3.1% |
| Ash* | 10.68% | 3.1% |

* Mineral content, important for bone health

Mineral & Vitamin Composition (mg/100g)

| | <i>Musca domestica (common housefly)</i> | <i>Tenebrio molitor (mealworm)</i> |
|-------------------|--|------------------------------------|
| Calcium | 2010 | 42 |
| Phosphorus | 1320 | unknown |
| Iron | 60.4 | 3.8 |

| | | |
|--------------------------|------|----------------|
| Zinc | 23.7 | 4.2 |
| Manganese | 5.6 | 0.44 |
| Copper | 3.4 | 0.78 |
| Vitamin A IU/100g | 2.89 | <i>unknown</i> |
| Vitamin B1 | 6.0 | <i>unknown</i> |
| Vitamin B2 | 18.3 | <i>unknown</i> |
| Vitamin C | 8.3 | <i>unknown</i> |
| Niacin | 17.6 | <i>unknown</i> |

Amino Acid Content (mg/g protein)

| | <i>Musca domestica (common housefly)</i> | <i>Tenebrio molitor (mealworm)</i> |
|----------------------|--|------------------------------------|
| Valine | 34 | 6.4 |
| Histidine | 26 | 1.7 |
| Serine | 32 | 4.7 |
| Proline | 31 | <i>unknown</i> |
| Alanine | 42 | 6.8 |
| Glycine | 39 | 2.0 |
| Glutamic Acid | 108 | 12.3 |
| Isoleucine | 35 | 4.8 |
| Leucine | 53 | 8.2 |
| Lysine | 52 | 5.3 |
| Methionine | 26 | 2.0 |
| Cysteine | 4 | 5.6 |
| Threonine | 90 | 4.0 |
| Tryptophan | 49.5 | .7 |