

**Nutritional Analysis of Turkey Burgers – A Recipe for Home-Made Dog Food to Supplement a High Quality Kibble. AAFCO Standard Composition Minimums and Maximums for Select Nutrients for Maintenance in Adult Dogs, Comparisons to Amount Fed to Achieve 1,000 kcals per day.**

<b>Nutrient</b>	<b>Amt/100 g of burger</b>	<b>Turkey Burger % Dry or amt/100kcal</b>	<b>Nutrient</b>	<b>AAFCO Min DRY</b>	<b>AAFCO Max Dry</b>	<b>Assume 500g/d 1000kcal@min</b>	<b>Assume 5 svgs. Burger/d as fed</b>	
Weight (g)	100 g		Weight (g)	---	---	500	500	
Kcals	200		Kcals	---	---	1000	1000	
<b>Dry Matter (%) to (g)</b>	<b>38</b>							
<i>Major Nutrients</i>		<i>Major Nutrients as % Dry</i>		<i>Major Nutrients</i>				
Protein (g)	15	Protein (%)	40	Protein (%)	18	---	90	75
Carbohydrate (g)	9	Carbohydrate (%)	24	Carbohydrate (%)	---	---	---	45
Total Fat (g)	4	Total Fat (%)	11	Total Fat (%)	5	---	25	20
Saturated Fat (g)	3	Saturated Fat (%)	8	Saturated Fat (%)	---	---		15
<i>Essential Fatty Acid</i>		<i>Essential Fatty Acid</i>		<i>Essential Fatty Acid</i>				
Linoleic Acid (g)	2.5	Linoleic Acid (%)	7	Linoleic Acid (%)	1	---	5	12.5
<i>Fat Soluble Vitamins</i>				<i>Fat Soluble Vitamins</i>				

Vitamin A (IU/38g)	1190	595/100 kcals		Vitamin A (IU/38g)	190	9500	2631	5950
Vitamin D (IU/38g)	14	7/100 kcals		Vitamin D (IU/38g)	19	190	263	70
Vitamin E (IU/38g)	0.2	0.1/100 kcals		Vitamin E (IU/38g)	2	38	26	1
Vitamin K (mg)	0.002	0.001/100 kcals		Vitamin K (mg)	---	---	---	0.01
<i>Water Soluble Vitamins</i>				<i>Water Soluble Vitamins</i>				
Thiamin-B1 (mg/38g)	0.1	0.05/100 kcals		Thiamin-B1 (mg/38g)	0.04	---	0.5	0.5
Riboflavin-B2 (mg/38g)	0.2	0.01/100 kcals		Riboflavin-B2 (mg/38g)	0.08	---	1.1	1.0
Niacin (mg/38g)	4.3	2.2/100 kcals		Niacin (mg/38g)	0.4	---	5.3	21.5
Pyridoxine-B6 (mg/38g)	0.4	0.2/100 kcals		Pyridoxine-B6 (mg/38g)	0.04	---	0.5	2.0
Folate (mg/38g)	0.009	0.005/100 kcals		Folate (mg/38g)	0.008	---	0.1	0.05
B-12 (mg/38g)	0.001	0.0005/100 kcals		B-12 (mg/38g)	0.0008	---	.01	0.005
Pantothenic Acid (mg/38g)	1	0.5/100 kcals		Pantothenic Acid (mg/38g)	0.4	---	5.3	5
Choline (mg/38g)	38	19/100 kcals		Choline (mg/38g)	46	---	600	190
<i>Major Minerals</i>		<i>Major Minerals</i>		<i>Major Minerals</i>				
Sodium (mg)	60	Sodium (%)	0.2	Sodium (%)	0.06	---	30	300
Potassium (mg)	200	Potassium (%)	0.5	Potassium (%)	0.6	---	300	1000
Calcium (mg)	260	Calcium (%)	0.7	Calcium (%)	0.6	2.5	300	1300
Phosphorus (mg)	190	Phosphorus (%)	0.5	Phosphorus (%)	0.5	1.6	250	950

Magnesium (mg)	20	Magnesium (%)	0.1	Magnesium (%)	0.04	0.3	20	100
<i>Calcium : Phosphorus</i>	1.4:1			<i>Calcium : Phosphorus</i>	1:1	2:1	1.2:1	1.4:1
<i>Trace Minerals</i>		<i>Trace Minerals</i>						
Iron (mg/38g)	1.7	0.85/100 kcals		Iron (mg/38g)	3	114	40	8.5
Zinc (mg/38g)	2.2	1.1/100 kcals		Zinc (mg/38g)	4.6	38	61	11
Copper (mg/38g)	0.1	0.05/100 kcals		Copper (mg/38g)	0.3	9.5	4	0.5
Manganese (mg/38g)	0.1	0.05/100 kcals		Manganese (mg/38g)	0.2	---	2.6	0.5
Selenium (mg/38g)	.02	0.01/100 kcals		Selenium (mg/38g)	0.004	0.08	0.05	0.1
<i>Carbohydrates</i>		<i>Carbohydrates</i>						
Total Fiber (g)	1.5	0.8/100 kcals		Total Fiber (g)	---	---	---	7.5
Soluble Fiber (g)	0.3	0.2/100 kcals		Soluble Fiber (g)	---	---	---	1.5
Insoluble Fiber (g)	0.2	0.1/100 kcals		Insoluble Fiber (g)	---	---	---	1
Total Sugars (g)	0.7	0.4/100 kcals		Total Sugars (g)	---	---	---	3.5
<i>Amino Acids</i>		<i>Amino Acids as % Dry</i>		<i>Amino Acids</i>				
Arginine (mg)	1000	Arginine (%)	2.6	Arginine (%)	0.5	---	2500	5000
Histidine (mg)	400	Histidine (%)	1.1	Histidine (%)	0.2	---	1000	2000
Isoleucine (mg)	625	Isoleucine (%)	1.7	Isoleucine (%)	0.4	---	2000	3125

Leucine (mg)	1150	Leucine (%)	3.0	Leucine (%)	0.6	---	3000	5750
Lysine (mg)	1100	Lysine (%)	2.9	Lysine (%)	0.6	---	3000	5500
Methionine (mg)	400	Methionine (%)	1.1	Methionine (%)	0.4	---	2000	2000
Phenylalanine (mg)	550	Phenylalanine (%)	1.5	Phenylalanine (%)	0.4	---	2000	2750
Tyrosine (mg)	500	Tyrosine (%)	1.3	Tyrosine (%)	0.4	---	2000	2500
Threonine (mg)	650	Threonine (%)	1.7	Threonine (%)	0.5	---	2500	3250
Tryptophan (mg)	160	Tryptophan (%)	0.4	Tryptophan (%)	0.2	---	1000	800
Valine (mg)	650	Valine (%)	1.7	Valine (%)	0.4	---	2000	3250
Moisture (g)- (ml)- (%)	62	31	Moisture (g)	---	---	---	---	310

Abbreviations: g=grams, mg=milligrams, mcg=micrograms, IU=International units, ml=milliliters, 1 fluid ounce = 30 ml, 1 g= 1000 mg, 1mg= 1000 mcg, 1 IU=0.3mcg retinol; 1 gram moisture = 1 ml moisture =1% moisture for 100 g serving (1serving of 100 grams assumes 62% moisture or 38 g or 38% dry matter by weight v. AAFCO assumes 100% dry weight and analysis is done post processing, extrusion and coating. Manufacturer determines the As fed basis) AAFCO Association American Animal Feed Control Officials: [www.aaftco.org](http://www.aaftco.org)

**Nutritional Analysis of Turkey Burgers: A Recipe for Home-Made Dog Food to Supplement a High Quality Kibble. Daily Recommendations for Maintenance in Adult Dogs of Ideal Body Weight.**

Nutrient	Amount/ 100g serving of burger	Recommended per kg body weight/ day	Needs of a 55 lb. (25 kg) Dog/day	Percent of needs per day provided by a 100g serving of Turkey Burger calculated for a healthy adult dog of ideal body weight for maintenance (not performance) on an <i>as fed basis</i> .
Weight (g)	100 g			
Kcals	200	40	1000	$200/1000=0.2 \times 100=20\%$
<i>Major Nutrients</i>				
Protein (g)	15	1.8	45	$15/45=0.33 \times 100=33\%$
Carbohydrate (g)	9	5	125	$9/125=.072 \times 100 = 7\%$
Total Fat (g)	4	1	25	$4/25=0.16 \times 100 = 16\%$
Saturated Fat (g)	3	---	---	
<i>Essential Fatty Acid</i>				
Linoleic Acid (g)	2.5	0.2	5	$2.5/5=0.5 \times 100=50\%$

<i>Fat Soluble Vitamins</i>				
Vitamin A (IU)	1190	75	1875	$1190/1875=0.64 \times 100=64\%$
Vitamin D (IU)	14	8	200	$14/200=0.07 \times 100= 7\%$
Vitamin E (IU)	0.2	0.5	12.5	$0.2/12.5 = 0.016 \times 100=1.6\%$
Vitamin K (mg)	0.002	0.002	0.5	$0.002/0.5 \times 100 = 0.4\%$
<i>Water Soluble Vitamins</i>				
Destruction Approximation for Cooking at 400° F for ~1 hour				
Thiamin-B1 (mg)	0.1	0.02	0.5	If 90% destruction is assumed= $0.01/0.5=0.02 \times 100 = 2\%$
Riboflavin-B2 (mg)	0.2	0.05	1.25	If 50% destruction is assumed = $0.1/0.5 \times 100 = 20\%$
Niacin (mg)	4.3	0.225	5.6	$4.3/5.6=0.77 \times 100 =77\%$
Pyridoxine-B6 (mg)	0.4	0.022	0.6	If 50% destruction is assumed = $0.2/0.6 \times 100 =33\%$
Folate (mg)	0.009	0.0004	0.01	If 50% destruction is assumed = $0.005/0.01 \times 100=50\%$
B-12 (mg)	0.001	0.0005	0.013	If 50% destruction is assumed = $0.0005/0.013 \times 100= 4\%$
Pantothenic Acid (mg)	1	0.2	5.0	If 50% destruction is assumed = $0.5/5.0 \times 100 = 10\%$
Choline (mg)	100	25	625	$100/625 \times 100 = 16\%$

<i>Major Minerals</i>				
Sodium (mg)	60	11	275	$60/275 \times 100 = 22\%$
Potassium (mg)	200	89	2225	$200/2225 \times 100 = 9\%$
Calcium (mg)	260	119	2975	$260/2975 \times 100 = 9\%$
Phosphorus (mg)	190	89	2225	$20/200 \times 100 = 10\%$
Magnesium (mg)	20	8	200	
<i>Calcium : Phosphorus</i>	1.4:1			Calcium to Phosphorus = 1.4 to 1
<i>Trace Minerals</i>				
Iron (mg)	1.7	0.7	17.5	$1.7/17.5 \times 100 = 10\%$
Zinc (mg)	2.2	0.7	17.5	$2.2/17.5 \times 100 = 12.6\%$
Copper (mg)	0.1	0.06	1.5	$0.1/1.5 \times 100 = 6.6\%$
Manganese (mg)	0.1	0.1	2.5	$0.1/2.5 \times 100 = 4\%$
Selenium (mg)	0.02	0.002	0.05	$0.02/0.05 \times 100 = 40\%$
<i>Carbohydrates</i>				

Total Fiber (g)	1.5	0.5	12.5	$1.5/12.5 \times 100 = 12\%$
Soluble Fiber (g)	0.03	0.25	6.25	$0.03/6.25 \times 100 = 0.5\%$
Insoluble Fiber (g)	0.2	0.25	6.25	$0.2/6.25 \times 100 = 3\%$
Total Sugars (g)	0.7	---	---	---
<i>Amino Acids</i>				
Arginine (mg)	1000	21	525	$1000/525 \times 100 = 191\%$
Histidine (mg)	400	22	550	$400/550 \times 100 = 73\%$
Isoleucine (mg)	625	48	1200	$625/1200 \times 100 = 52\%$
Leucine (mg)	1150	84	2100	$1150/2100 \times 100 = 55\%$
Lysine (mg)	1100	50	1250	$1100/1250 \times 100 = 88\%$
Methionine (mg)	400	30	750	$400/750 \times 100 = 53\%$
Phenylalanine (mg)	550	43	1075	$550/1075 \times 100 = 51\%$
Tyrosine (mg)	500	43	1075	$500/1075 \times 100 = 47\%$
Threonine (mg)	650	44	1100	$650/1100 \times 100 = 59\%$
Tryptophan (mg)	160	13	325	$160/325 \times 100 = 49\%$



Valine (mg)	650	60	1500	$650/1000 \times 100 = 43\%$
Moisture (g)- (ml)- (%)	62	55 ml	1375 ml	$62/1375 \times 100 = 5\%$

This recipe was analyzed using Nutritionist Pro, Axxya Systems™ (2013). Because there is no way to tell, without doing a guaranteed analysis of 100% dry matter in the finished turkey burger, what happened during the cooking process, a number of assumptions were applied, including moisture content and moisture losses. Destruction of vitamins during the cooking process was not factored in (AAFCO values are obtained from the finished product). The software calculated the nutrient composition of the recipe without taking into account the unique parameters of preparation by a home cook. (Home cooking is not standardized in the way a food manufacturer's is, where plant processes are maintained at a very narrow range for quality assurance.)

An important caveat: Quantity of food fed varies according to the manufacturers' processing and analysis values. So, if a 25 kg (55 pound) dog requires 5 cups of food per day according a specific commercial brand's instructions, and vitamin and mineral supplements are added to the kibble post-processing, the comparison between feeding 100g of turkey burger that you make yourself and 100g of dry, extruded kibble that has been fortified post-processing with vitamins and minerals is an apples-to-oranges exercise.

—Roschelle Heuberger, PhD, RD