

Back to Basics: Interpreting Product Guides & Labels

Tammy J Owens, DVM, DACVN
Assistant Professor
Small Animal Clinical Sciences



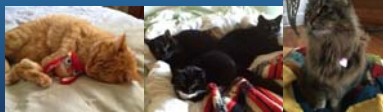
Objectives

- Review some nutrition basics
- Utilize basic nutritional tools
- Case examples
- Nutritional assessments - incorporating into exam
 - Red flags
- Case example
- Hot topics



Objectives

- Review some nutrition basics
- Utilize basic nutritional tools
- Case examples
- Nutritional assessments - incorporating into exam
 - Red flags
- Case example
- Hot topics



Resources

- Textbooks:
 - Applied Veterinary Clinical Nutrition
- WSAVA website
 - <http://www.wsava.org/nutrition-toolkit>
- ACVN website
 - <http://www.acvn.org/>
- Pet Nutrition Alliance website
 - <http://petnutritionalliance.org/>
- Timely Topics in Nutrition - JAVMA
- Product guides



Product Guides

- Contact company reps
 - Electronic copy (PDF)
 - Paper/hardcopy

OR

- <https://vet-royalcanin-ca.force.com/>
- <http://www.hillspet.ca/en-ca/index.html>



Nutrition

- Interaction of food with an organism
 - Nutrients and other substances in food
 - Effects on growth, reproduction, maintenance
 - Interaction contributes to health or disease
 - Complex



Clinical Nutrition

- Management of patients' nutritional needs

Nutritional Needs

- Animals should be fed to meet their Energy needs
- Food also needs to provide essential nutrients
 - Water
 - Energy
 - Macronutrients: protein, fat, carbohydrates
 - Essential amino acids
 - Essential fatty acids
 - Micronutrients
 - Essential vitamins
 - Essential minerals

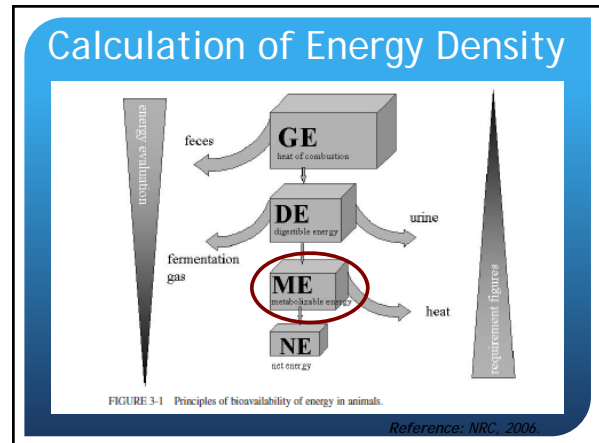
Where to s...

GUARANTEED ANALYSIS - ANALYSE GARANTIE

Crude Protein (min)	26.0%
Crude Fat (min)	12.0%
Crude Fiber (max)	2.0%
Moisture (max)	10.0%
Calcium (min)	0.10%
Phosphorus (min)	0.08%
Sulfur (min)	0.01%
Sodium (min)	0.01%
Potassium (min)	0.01%
Magnesium (min)	0.01%
Zinc (min)	0.01%
Copper (min)	0.01%
Iron (min)	0.01%
Manganese (min)	0.01%
Selenium (min)	0.01%
Chlorine (min)	0.01%
Fluorine (min)	0.01%
Iodine (min)	0.01%
Antioxidants	Ascorbic acid, Vitamin E, Vitamin C, Vitamin B1, Vitamin B2, Vitamin B6, Vitamin B12, Vitamin K, Vitamin A, Vitamin D, Vitamin H, Vitamin M, Vitamin N, Vitamin P, Vitamin Q, Vitamin R, Vitamin S, Vitamin T, Vitamin U, Vitamin V, Vitamin W, Vitamin X, Vitamin Y, Vitamin Z, Vitamin AA, Vitamin AB, Vitamin AC, Vitamin AD, Vitamin AE, Vitamin AF, Vitamin AG, Vitamin AH, Vitamin AI, Vitamin AJ, Vitamin AK, Vitamin AL, Vitamin AM, Vitamin AN, Vitamin AO, Vitamin AP, Vitamin AQ, Vitamin AR, Vitamin AS, Vitamin AT, Vitamin AU, Vitamin AV, Vitamin AW, Vitamin AX, Vitamin AY, Vitamin AZ, Vitamin BA, Vitamin BB, Vitamin BC, Vitamin BD, Vitamin BE, Vitamin BF, Vitamin BG, Vitamin BH, Vitamin BI, Vitamin BJ, Vitamin BK, Vitamin BL, Vitamin BM, Vitamin BN, Vitamin BO, Vitamin BP, Vitamin BQ, Vitamin BR, Vitamin BS, Vitamin BT, Vitamin BU, Vitamin BV, Vitamin BW, Vitamin BX, Vitamin BY, Vitamin BZ, Vitamin CA, Vitamin CB, Vitamin CC, Vitamin CD, Vitamin CE, Vitamin CF, Vitamin CG, Vitamin CH, Vitamin CI, Vitamin CJ, Vitamin CK, Vitamin CL, Vitamin CM, Vitamin CN, Vitamin CO, Vitamin CP, Vitamin CQ, Vitamin CR, Vitamin CS, Vitamin CT, Vitamin CU, Vitamin CV, Vitamin CW, Vitamin CX, Vitamin CY, Vitamin CZ, Vitamin DA, Vitamin DB, Vitamin DC, Vitamin DD, Vitamin DE, Vitamin DF, Vitamin DG, Vitamin DH, Vitamin DI, Vitamin DJ, Vitamin DK, Vitamin DL, Vitamin DM, Vitamin DN, Vitamin DO, Vitamin DP, Vitamin DQ, Vitamin DR, Vitamin DS, Vitamin DT, Vitamin DU, Vitamin DV, Vitamin DW, Vitamin DX, Vitamin DY, Vitamin DZ, Vitamin EA, Vitamin EB, Vitamin EC, Vitamin ED, Vitamin EE, Vitamin EF, Vitamin EG, Vitamin EH, Vitamin EI, Vitamin EJ, Vitamin EK, Vitamin EL, Vitamin EM, Vitamin EN, Vitamin EO, Vitamin EP, Vitamin EQ, Vitamin ER, Vitamin ES, Vitamin ET, Vitamin EU, Vitamin EV, Vitamin EW, Vitamin EX, Vitamin EY, Vitamin EZ, Vitamin FA, Vitamin FB, Vitamin FC, Vitamin FD, Vitamin FE, Vitamin FF, Vitamin FG, Vitamin FH, Vitamin FI, Vitamin FJ, Vitamin FK, Vitamin FL, Vitamin FM, Vitamin FN, Vitamin FO, Vitamin FP, Vitamin FQ, Vitamin FR, Vitamin FS, Vitamin FT, Vitamin FU, Vitamin FV, Vitamin FW, Vitamin FX, Vitamin FY, Vitamin FZ, Vitamin GA, Vitamin GB, Vitamin GC, Vitamin GD, Vitamin GE, Vitamin GF, Vitamin GG, Vitamin GH, Vitamin GI, Vitamin GJ, Vitamin GK, Vitamin GL, Vitamin GM, Vitamin GN, Vitamin GO, Vitamin GP, Vitamin GQ, Vitamin GR, Vitamin GS, Vitamin GT, Vitamin GU, Vitamin GV, Vitamin GW, Vitamin GX, Vitamin GY, Vitamin GZ, Vitamin HA, Vitamin HB, Vitamin HC, Vitamin HD, Vitamin HE, Vitamin HF, Vitamin HG, Vitamin HH, Vitamin HI, Vitamin HJ, Vitamin HK, Vitamin HL, Vitamin HM, Vitamin HN, Vitamin HO, Vitamin HP, Vitamin HQ, Vitamin HR, Vitamin HS, Vitamin HT, Vitamin HU, Vitamin HV, Vitamin HW, Vitamin HX, Vitamin HY, Vitamin HZ, Vitamin IA, Vitamin IB, Vitamin IC, Vitamin ID, Vitamin IE, Vitamin IF, Vitamin IG, Vitamin IH, Vitamin II, Vitamin IJ, Vitamin IK, Vitamin IL, Vitamin IM, Vitamin IN, Vitamin IO, Vitamin IP, Vitamin IQ, Vitamin IR, Vitamin IS, Vitamin IT, Vitamin IU, Vitamin IV, Vitamin IW, Vitamin IX, Vitamin IY, Vitamin IZ, Vitamin JA, Vitamin JB, Vitamin JC, Vitamin JD, Vitamin JE, Vitamin JF, Vitamin JG, Vitamin JH, Vitamin JI, Vitamin JJ, Vitamin JK, Vitamin JL, Vitamin JM, Vitamin JN, Vitamin JO, Vitamin JP, Vitamin JQ, Vitamin JR, Vitamin JS, Vitamin JT, Vitamin JU, Vitamin JV, Vitamin JW, Vitamin JX, Vitamin JY, Vitamin JZ, Vitamin KA, Vitamin KB, Vitamin KC, Vitamin KD, Vitamin KE, Vitamin KF, Vitamin KG, Vitamin KH, Vitamin KI, Vitamin KJ, Vitamin KK, Vitamin KL, Vitamin KM, Vitamin KN, Vitamin KO, Vitamin KP, Vitamin KQ, Vitamin KR, Vitamin KS, Vitamin KT, Vitamin KU, Vitamin KV, Vitamin KW, Vitamin KX, Vitamin KY, Vitamin KZ, Vitamin LA, Vitamin LB, Vitamin LC, Vitamin LD, Vitamin LE, Vitamin LF, Vitamin LG, Vitamin LH, Vitamin LI, Vitamin LJ, Vitamin LK, Vitamin LL, Vitamin LM, Vitamin LN, Vitamin LO, Vitamin LP, Vitamin LQ, Vitamin LR, Vitamin LS, Vitamin LT, Vitamin LU, Vitamin LV, Vitamin LW, Vitamin LX, Vitamin LY, Vitamin LZ, Vitamin MA, Vitamin MB, Vitamin MC, Vitamin MD, Vitamin ME, Vitamin MF, Vitamin MG, Vitamin MH, Vitamin MI, Vitamin MJ, Vitamin MK, Vitamin ML, Vitamin MM, Vitamin MN, Vitamin MO, Vitamin MP, Vitamin MQ, Vitamin MR, Vitamin MS, Vitamin MT, Vitamin MU, Vitamin MV, Vitamin MW, Vitamin MX, Vitamin MY, Vitamin MZ, Vitamin NA, Vitamin NB, Vitamin NC, Vitamin ND, Vitamin NE, Vitamin NF, Vitamin NG, Vitamin NH, Vitamin NI, Vitamin NJ, Vitamin NK, Vitamin NL, Vitamin NM, Vitamin NN, Vitamin NO, Vitamin NP, Vitamin NQ, Vitamin NR, Vitamin NS, Vitamin NT, Vitamin NU, Vitamin NV, Vitamin NW, Vitamin NX, Vitamin NY, Vitamin NZ, Vitamin OA, Vitamin OB, Vitamin OC, Vitamin OD, Vitamin OE, Vitamin OF, Vitamin OG, Vitamin OH, Vitamin OI, Vitamin OJ, Vitamin OK, Vitamin OL, Vitamin OM, Vitamin ON, Vitamin OO, Vitamin OP, Vitamin OQ, Vitamin OR, Vitamin OS, Vitamin OT, Vitamin OU, Vitamin OV, Vitamin OW, Vitamin OX, Vitamin OY, Vitamin OZ, Vitamin PA, Vitamin PB, Vitamin PC, Vitamin PD, Vitamin PE, Vitamin PF, Vitamin PG, Vitamin PH, Vitamin PI, Vitamin PJ, Vitamin PK, Vitamin PL, Vitamin PM, Vitamin PN, Vitamin PO, Vitamin PP, Vitamin PQ, Vitamin PR, Vitamin PS, Vitamin PT, Vitamin PU, Vitamin PV, Vitamin PW, Vitamin PX, Vitamin PY, Vitamin PZ, Vitamin QA, Vitamin QB, Vitamin QC, Vitamin QD, Vitamin QE, Vitamin QF, Vitamin QG, Vitamin QH, Vitamin QI, Vitamin QJ, Vitamin QK, Vitamin QL, Vitamin QM, Vitamin QN, Vitamin QO, Vitamin QP, Vitamin QQ, Vitamin QR, Vitamin QS, Vitamin QT, Vitamin QU, Vitamin QV, Vitamin QW, Vitamin QX, Vitamin QY, Vitamin QZ, Vitamin RA, Vitamin RB, Vitamin RC, Vitamin RD, Vitamin RE, Vitamin RF, Vitamin RG, Vitamin RH, Vitamin RI, Vitamin RJ, Vitamin RK, Vitamin RL, Vitamin RM, Vitamin RN, Vitamin RO, Vitamin RP, Vitamin RQ, Vitamin RR, Vitamin RS, Vitamin RT, Vitamin RU, Vitamin RV, Vitamin RW, Vitamin RX, Vitamin RY, Vitamin RZ, Vitamin SA, Vitamin SB, Vitamin SC, Vitamin SD, Vitamin SE, Vitamin SF, Vitamin SG, Vitamin SH, Vitamin SI, Vitamin SJ, Vitamin SK, Vitamin SL, Vitamin SM, Vitamin SN, Vitamin SO, Vitamin SP, Vitamin SQ, Vitamin SR, Vitamin SS, Vitamin ST, Vitamin SU, Vitamin SV, Vitamin SW, Vitamin SX, Vitamin SY, Vitamin SZ, Vitamin TA, Vitamin TB, Vitamin TC, Vitamin TD, Vitamin TE, Vitamin TF, Vitamin TG, Vitamin TH, Vitamin TI, Vitamin TJ, Vitamin TK, Vitamin TL, Vitamin TM, Vitamin TN, Vitamin TO, Vitamin TP, Vitamin TQ, Vitamin TR, Vitamin TS, Vitamin TT, Vitamin TU, Vitamin TV, Vitamin TW, Vitamin TX, Vitamin TY, Vitamin TZ, Vitamin UA, Vitamin UB, Vitamin UC, Vitamin UD, Vitamin UE, Vitamin UF, Vitamin UG, Vitamin UH, Vitamin UI, Vitamin UJ, Vitamin UK, Vitamin UL, Vitamin UM, Vitamin UN, Vitamin UO, Vitamin UP, Vitamin UQ, Vitamin UR, Vitamin US, Vitamin UT, Vitamin UY, Vitamin UZ, Vitamin VA, Vitamin VB, Vitamin VC, Vitamin VD, Vitamin VE, Vitamin VF, Vitamin VG, Vitamin VH, Vitamin VI, Vitamin VJ, Vitamin VK, Vitamin VL, Vitamin VM, Vitamin VN, Vitamin VO, Vitamin VP, Vitamin VQ, Vitamin VR, Vitamin VS, Vitamin VT, Vitamin VY, Vitamin VZ, Vitamin WA, Vitamin WB, Vitamin WC, Vitamin WD, Vitamin WE, Vitamin WF, Vitamin WG, Vitamin WH, Vitamin WI, Vitamin WJ, Vitamin WK, Vitamin WL, Vitamin WM, Vitamin WN, Vitamin WO, Vitamin WP, Vitamin WQ, Vitamin WR, Vitamin WS, Vitamin WT, Vitamin WY, Vitamin WZ, Vitamin XA, Vitamin XB, Vitamin XC, Vitamin XD, Vitamin XE, Vitamin XF, Vitamin XG, Vitamin XH, Vitamin XI, Vitamin XJ, Vitamin XK, Vitamin XL, Vitamin XM, Vitamin XN, Vitamin XO, Vitamin XP, Vitamin XQ, Vitamin XR, Vitamin XS, Vitamin XT, Vitamin XU, Vitamin XV, Vitamin XW, Vitamin XX, Vitamin XY, Vitamin XZ, Vitamin YA, Vitamin YB, Vitamin YC, Vitamin YD, Vitamin YE, Vitamin YF, Vitamin YG, Vitamin YH, Vitamin YI, Vitamin YJ, Vitamin YK, Vitamin YL, Vitamin YM, Vitamin YN, Vitamin YO, Vitamin YP, Vitamin YQ, Vitamin YR, Vitamin YS, Vitamin YT, Vitamin YU, Vitamin YV, Vitamin YW, Vitamin YX, Vitamin YY, Vitamin YZ, Vitamin ZA, Vitamin ZB, Vitamin ZC, Vitamin ZD, Vitamin ZE, Vitamin ZF, Vitamin ZG, Vitamin ZH, Vitamin ZI, Vitamin ZJ, Vitamin ZK, Vitamin ZL, Vitamin ZM, Vitamin ZN, Vitamin ZO, Vitamin ZP, Vitamin ZQ, Vitamin ZR, Vitamin ZS, Vitamin ZT, Vitamin ZU, Vitamin ZV, Vitamin ZW, Vitamin ZX, Vitamin ZY, Vitamin ZZ

CALORIE CONTENT/VALEUR CALORIQUE
 Metabolizable Energy (ME) (Calculated): 3680 kcal/kg, 391 kcal/cup
 Energie métabolisable (EM) (calculée) : 3680 kcal/kg, 391 kcal/tasse

NUTRITIONAL GUARANTEE - GARANTIE NUTRITIONNELLE
 CESAR® Roast Chicken, Corn & Pea Flavour Food for small dogs is formulated to meet the nutritional levels established by the AAFCO dog food nutrient profiles for all life stages.
 La nourriture pour petits chiens CESAR® « saveur de poulet rôti, carottes et petits pois » est formulée pour satisfaire aux niveaux nutritionnels établis selon les profils de l'AAFCO sur les nutriments contenus dans la nourriture pour chiens pour toutes les étapes de la vie.

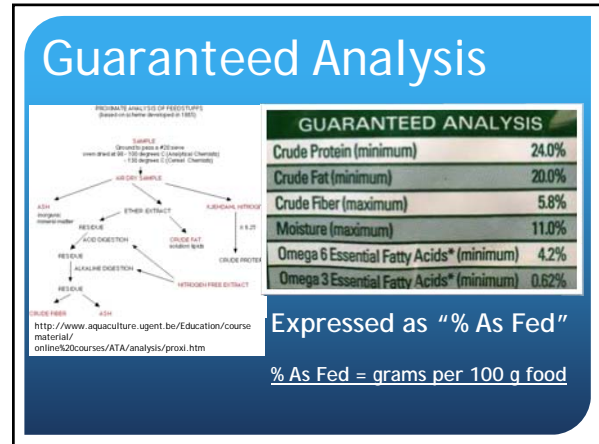
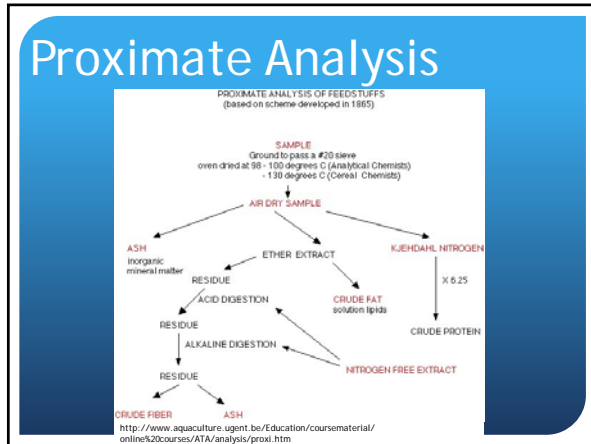


Metabolizable Energy (ME)

- Label → kcal/kg
- Calculated as kcal/100 g (of food)

Energy Density

- Metabolizable Energy (ME)
 - kcal/kg
 - From macronutrients
 - Protein, Fat, Carbohydrate
 - Atwater factors
 - Protein = 4 kcal/g; Fat = 9 kcal/g; CHO = 4 kcal/g
 - Modified Atwater factors
 - Protein = 3.5 kcal/g; Fat = 8.5 kcal/g; CHO = 3.5 kcal/g



Guaranteed Analysis (GA)

- Crude protein, MIN
- Crude fat, MIN
 - max. if calorie-restricted
- Crude fibre, MAX
- Moisture, MAX
- Others
 - only if highlighted on label

GUARANTEED ANALYSIS	
Crude Protein (minimum)	24.0%
Crude Fat (minimum)	20.0%
Crude Fiber (maximum)	5.8%
Moisture (maximum)	11.0%
Omega 6 Essential Fatty Acids* (minimum)	4.2%
Omega 3 Essential Fatty Acids* (minimum)	0.62%

Regulatory

Reference: AAFCO, 2014

Guaranteed Analysis (GA)

- Crude protein, MIN
- Crude fat, MIN
 - max. if calorie-restricted
- Crude fibre, MAX
- Moisture, MAX
- Others
 - only if highlighted on label

Compare to "Typical Analysis" "average"

May be more representative

Not required

Some Companies

- product guides
- websites
- upon request

GUARANTEED ANALYSIS	
Crude Protein (minimum)	24.0%
Crude Fat (minimum)	20.0%
Crude Fiber (maximum)	5.8%
Moisture (maximum)	11.0%
Omega 6 Essential Fatty Acids* (minimum)	4.2%
Omega 3 Essential Fatty Acids* (minimum)	0.62%

Regulatory

Reference: AAFCO, 2014

"Carbohydrate"

Calculated by difference

Fiber ←

Protein

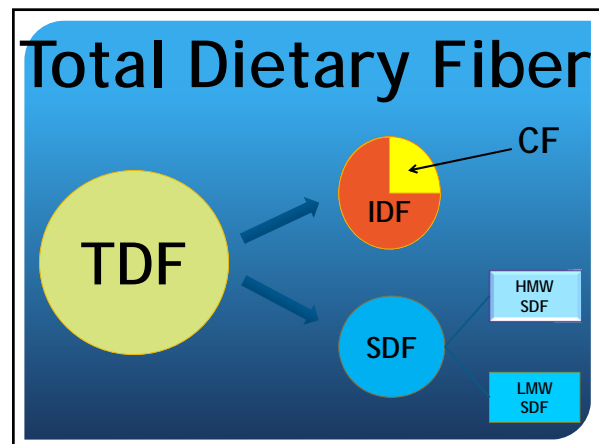
Fat

Moisture

Ash (estimate ~3% if not on GA)

+ "Carbohydrate" ←

100 %



"Carbohydrate"

Calculated by difference

Fiber ←

Protein

Fat

Moisture

Ash (estimate ~3% if not on GA)

+ "Carbohydrate" ←

100 %

Metabolizable Energy (ME)

GUARANTEED ANALYSIS	
Crude Protein (minimum)	24.0%
Crude Fat (minimum)	20.0%
Crude Fiber (maximum)	5.8%
Moisture (maximum)	11.0%
Omega-3 Essential Fatty Acids* (minimum)	0.42%
Omega-6 Essential Fatty Acids* (minimum)	0.62%
Ash	3%
Total	60.8%
CHO (by difference)	39.2%
	100 %

Metabolizable Energy (ME)

- Typically expressed on label as kcal/kg
- Calculated as kcal/100 g (of food)

ME (kcal/100 g) =

Prot (g/100 g)

+ Fat (g/100 g)

+ CHO (g/100 g)

** May need to use Atwater factors highly-digestible diets*

Metabolizable Energy (ME)

- ME (kcal/100 g) =

Prot (g/100 g)

+ Fat (g/100 g)

+ CHO (g/100 g)

** May need to use Atwater Factors highly-digestible diets*

Metabolizable Energy (ME)

- ME (kcal/100 g) =

Prot (g/100 g) * 3.5 kcal/g

+ Fat (g/100 g) * 8.5 kcal/g

+ CHO (g/100 g) * 3.5 kcal/g

** May need to use Atwater factors highly-digestible diets*

Metabolizable Energy (ME)

GUARANTEED ANALYSIS	
Crude Protein (minimum)	24.0%
Crude Fat (minimum)	20.0%
Crude Fiber (maximum)	5.8%
Moisture (maximum)	11.0%
Omega-3 Essential Fatty Acids* (minimum)	0.42%
Omega-6 Essential Fatty Acids* (minimum)	0.62%
Ash	3%
Total	60.8%
CHO (by difference)	39.2%
	100 %

Metabolizable Energy (ME)

GUARANTEED ANALYSIS	
Crude Protein (minimum)	24.0%
Crude Fat (minimum)	20.0%
Crude Fiber (maximum)	5.8%
Moisture (maximum)	11.0%
Omega-3 Fatty Acids (minimum)	4.2%
Omega-6 Fatty Acids (minimum)	0.62%
Ash	3%
Total	60.8%
CHO (by difference)	39.2%
	100 %

Prot - 24 g/100g * 3.5 kcal/g = 84 kcal/100 g
 Fat - 20 g/100g * 8.5 kcal/g = 170 kcal/100 g
 CHO -36.2 g/100g * 3.5 kcal/g = 126.7 kcal/100 g
 Total = 380.7 kcal/100 g

Metabolizable Energy (ME)

GUARANTEED ANALYSIS	
Crude Protein (minimum)	24.0%
Crude Fat (minimum)	20.0%
Crude Fiber (maximum)	5.8%
Moisture (maximum)	11.0%
Omega-3 Fatty Acids (minimum)	4.2%
Omega-6 Fatty Acids (minimum)	0.62%
Ash	3%
Total	60.8%
CHO (by difference)	39.2%
	100 %

Prot - 24 g/100g * 3.5 kcal/g = 84 kcal/100 g
 Fat - 20 g/100g * 8.5 kcal/g = 170 kcal/100 g
 CHO -36.2 g/100g * 3.5 kcal/g = 126.7 kcal/100 g
 Total = 380.7 kcal/100 g

Can project Percent (%) Calories from each:
 84 kcal Protein / 380.7 kcal
 → 22.06% of calories from protein

“Percent Metabolizable Energy From”
 Protein - 22% Fat - 45% CHO - 33%

Allows comparison between diets
fed to Energy needs..

www.BalanceIT.com

Guaranteed Analysis Converter
 It can be difficult to compare the protein, fat and carbohydrate levels between different foods by using the information on a package's label. This is especially difficult when comparing pet foods with large differences in moisture (can vs. dry) or fiber level.
 Please note that the values that are calculated may be slightly different from the values used by the manufacturer since the actual digestibility of protein, fat and carbohydrate and at times ash must be estimated. In addition, minimum values can differ greatly from the typical or actual value; therefore, care should be used as protein and fat levels may actually be higher than the label indicates.

Guaranteed Analysis Values

% Crude Protein, min	24.0%
% Crude Fat, min	20.0%
% Moisture, max	11.0%
% Fiber, max	5.8%
% Ash, max	3.0%
% CHO (by difference)	36.2%

Caloric Distribution Estimate*

% ME Protein	22.06%
% ME Fat	45.0%
% ME CHO	33.0%

* The following "modified Atwater" factors are used: 3.5 kcal/g protein, 8.5 kcal/g fat, and 3.5 kcal/g carbohydrate.

https://secure.balanceit.com/tools/_gaconverter/index.php

essentialcare ADULT FORMULA FOR DOGS

DRY FEEDING INSTRUCTIONS

Weight at Maturity	Feeding Amount*
3-12 lbs	1-5 cups
13-20 lbs	6-9 cups
21-35 lbs	10-16 cups
36-50 lbs	17-22 cups
51-75 lbs	23-34 cups
76-100 lbs	35-45 cups
Over 100 lbs	Over 45 cups

* 4 cups plus 1/4 cup for each 4.5 kg (10 lbs) of body weight over 45 kg (100 lbs).

NUTRITIONAL ANALYSIS (ESTIMATED) (SEE FORMULA)

Guaranteed Analysis	As Fed	Dried Basis	As Fed	Dried Basis
Crude Protein	24.0%	24.0%	24.0%	24.0%
Crude Fat	20.0%	20.0%	20.0%	20.0%
Crude Fiber	5.8%	5.8%	5.8%	5.8%
Moisture	11.0%	11.0%	11.0%	11.0%
Omega-3 Fatty Acids	4.2%	4.2%	4.2%	4.2%
Omega-6 Fatty Acids	0.62%	0.62%	0.62%	0.62%
Ash	3.0%	3.0%	3.0%	3.0%
Total	60.8%	60.8%	60.8%	60.8%
CHO (by difference)	39.2%	39.2%	39.2%	39.2%

DRY FEEDING INSTRUCTIONS

Weight at Maturity	Feeding Amount*
3-12 lbs	1-5 cups
13-20 lbs	6-9 cups
21-35 lbs	10-16 cups
36-50 lbs	17-22 cups
51-75 lbs	23-34 cups
76-100 lbs	35-45 cups
Over 100 lbs	Over 45 cups

* 4 cups plus 1/4 cup for each 4.5 kg (10 lbs) of body weight over 45 kg (100 lbs).

Metabolizable Energy (ME)¹ 3950 kcal/kg
 Metabolizable Energy (ME)² 1795 kcal/lb
 Metabolizable Energy (ME)³ 443 kcal/8 oz (250 ml) cup

¹Using a standard 250 ml/8 oz measuring cup which contains approximately 1/2 cup of Purina Veterinary Diet® essentialcare® Adult Formula for Dogs. Provides fresh water in a clean container daily (calories of metabolizable energy (ME)).

essentialcare ADULT FORMULA FOR DOGS

DRY FEEDING INSTRUCTIONS

Weight at Maturity	Feeding Amount*
3-12 lbs	1-5 cups
13-20 lbs	6-9 cups
21-35 lbs	10-16 cups
36-50 lbs	17-22 cups
51-75 lbs	23-34 cups
76-100 lbs	35-45 cups
Over 100 lbs	Over 45 cups

* 4 cups plus 1/4 cup for each 4.5 kg (10 lbs) of body weight over 45 kg (100 lbs).

NUTRITIONAL ANALYSIS (ESTIMATED) (SEE FORMULA)

Guaranteed Analysis	As Fed	Dried Basis	As Fed	Dried Basis
Crude Protein	24.0%	24.0%	24.0%	24.0%
Crude Fat	20.0%	20.0%	20.0%	20.0%
Crude Fiber	5.8%	5.8%	5.8%	5.8%
Moisture	11.0%	11.0%	11.0%	11.0%
Omega-3 Fatty Acids	4.2%	4.2%	4.2%	4.2%
Omega-6 Fatty Acids	0.62%	0.62%	0.62%	0.62%
Ash	3.0%	3.0%	3.0%	3.0%
Total	60.8%	60.8%	60.8%	60.8%
CHO (by difference)	39.2%	39.2%	39.2%	39.2%

DIGESTION TEST RESULTS		
Digestibility:	Dry Formula	Canned Formula
Total, %	85.9	81.1
Protein, %	88.0	89.6
Fat, %	95.4	93.8
Carbohydrate, %	91.5	78.5
Percentage of Metabolizable Energy from:		
Protein, %	25.2	42.3
Fat, %	38.3	34.4
Carbohydrate, %	36.5	23.3

** Carbohydrate values are too low to be calculated.

Nutritional Needs

- Animals should be fed to meet their Energy needs
- Food also needs to provide essential nutrients
 - Water
 - Energy
 - Macronutrients: protein, fat, carbohydrates
 - Essential amino acids
 - Essential fatty acids
 - Micronutrients
 - Essential vitamins
 - Essential minerals

Nutritional Needs

- Animals should be fed to meet their Energy needs
- Food also needs to provide essential nutrients
 - Water
 - Energy
 - Macronutrients: **protein, fat, carbohydrates**
 - **Essential amino acids**
 - **Essential fatty acids**
 - Micronutrients
 - **Essential vitamins**
 - **Essential minerals**

Essential Nutrients

GUARANTEED ANALYSIS			
Crude Protein (Min)	21.0%	Linoleic Acid (Min)	1.5%
Crude Fat (Min)	10.0%	Calcium (Ca) (Min)	1.0%
Crude Fiber (Max)	4.5%	Phosphorus (P) (Min)	0.8%
Moisture (Max)	12.0%	Vitamin A (Min)	10,000 IU/kg

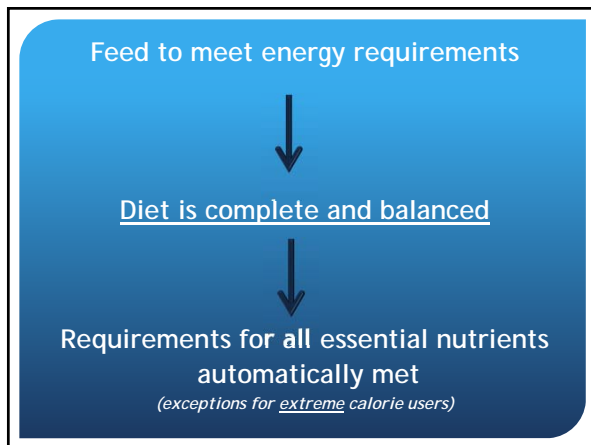
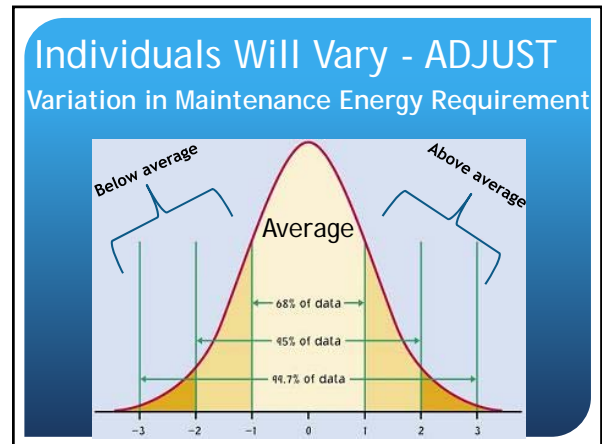
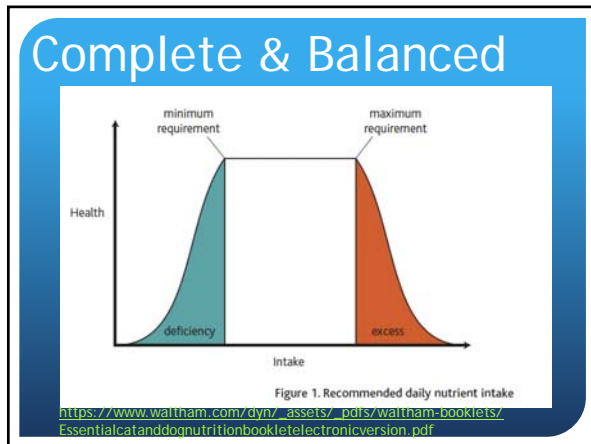
INGREDIENTS: Ground yellow corn, poultry by-product meal, corn gluten meal, soybean meal, beet (fallow preserved with mixed-tocopherols (source of vitamin E), brewers rice, dicalcium phosphate, calcium carbonate, malted barley flour, salt, dried whey, potassium chloride, L-lysine monohydrochloride, animal digest, choline chloride, zinc oxide, ferrous sulfate, vitamin supplements (A, E, B-12, D-3), manganese sulfate, niacin, calcium pantothenate, brewers dried yeast, riboflavin supplement, biotin, pantoic acid, pyridoxine hydrochloride, copper sulfate, thiamine mononitrate, folic acid, menadione sodium bisulfite complex (source of vitamin K activity), calcium iodate. I-4101

© 1999Ralston Purina Company Printed in U.S.A.

Animal feeding tests using Association of American Feed Control Officials (AAFCO) procedures substantiate that Purina Dog Chow provides complete and balanced nutrition for all life stages.

Complete & Balanced

- What does “complete” mean?
 - All **ESSENTIAL** nutrients present
 - species & life-stage
- What does “balanced” mean?
 - Nutrients in correct amounts & proportions
 - Prevent deficiencies or excesses
 - Varies with species & life-stage



- ## Who determined nutrient reqs?
- National Research Council (NRC)
 - Most recent publication - 2006
 - Key academic experts in field
 - Provides MR, AI, RA, & SUL when available
 - Association of American Feed Control Officials (AAFCO)
 - Published every year, may or may not update recommendations
 - Invited experts from industry & academia
 - Provides RA & SUL ONLY
 - Modifications for practical industry concerns
 - Safety margin for commercialization & diet digestibility

- ## Who determined nutrient reqs?
- FEDIAF
 - Fédération Européenne de L'Industrie des Aliments Pour Animaux Familiers
 - European equivalent to AAFCO
 - Private research
 - Should still comply with established guidelines or legal requirements but may have preferred ranges within allowed parameters...

AAFCO DOG FOOD NUTRIENT PROFILES BASED ON CALORIE CONTENT

Nutrients	Units per 1000 kcal ME	Growth & Reproduction Minimum	Adult Maintenance Minimum*	Maximum
Crude Protein	g	56.3	45.0	
Arginine	g	2.50	1.28	
Histidine	g	1.10	0.48	
Isoleucine	g	1.78	0.95	
Leucine	g	3.23	1.70	
Lysine	g	2.25	1.58	
Methionine	g	0.88	0.83	
Methionine-cystine	g	1.75	1.63	

http://www.aafco.org/Pdfs/0/SiteContent/Regulatory/Committees/Pet-Food/Reports/Pet_Food_Report_2013_10yearProposed_Revisions_to_AAFCO_Nutrient_Profiles.pdf

NUTRITIONAL ADEQUACY STATEMENT: DRY FORMULA

Animal feeding tests using Association of American Feed Control Officials (AAFCO) procedures substantiate that Purina Veterinary Diets essential care Adult Formula For Dogs provides complete and balanced nutrition for maintenance of adult dogs.

The following feeding program is recommended as a guideline only, with discretionary clinical adjustments for proper weight maintenance.

AVERAGE NUTRIENT CONTENT ON SERVING AND 100 CALORIE BASIS

	Dry Formula		Canned Formula	
	Grams per 100 kcal ME	Grams per 8 oz. cup	Grams per 100 kcal ME	Grams per 156 g can
Protein	6.84	30.24	13.13	17.79
Carbohydrate	9.87	43.68	5.53	7.49
Fat	4.33	19.15	3.92	5.30
Fibre	0.27	1.21	0.35	0.47
Calcium	0.34	1.49	0.55	0.75
Linoleic Acid	0.48	2.13	0.69	0.94
Phosphorus	0.23	1.01	0.36	0.48
Sodium	0.10	0.45	0.28	0.37
Potassium	0.17	0.75	0.41	0.56
Chloride	0.21	0.94	0.62	0.84
Magnesium	0.02	0.10	0.02	0.03
Omega-3	0.14	0.60	0.0	0.0

AVERAGE NUTRIENT COMPOSITION

	Dry Formula		Canned Formula	
	As Fed	Dry Matter	As Fed	Dry Matter
Protein, %	17.7	19.2	15.1	16.4
Carbohydrate, %*	31.3	47.2	16.4	51.3
Fat, %	17.7	19.2	15.1	16.4
Fibre, %	1.08	0.83	0.30	0.33
Calcium, %	1.33	1.46	0.48	0.55
Linoleic Acid, %	1.90	2.08	0.60	0.69
Phosphorus, %	0.90	0.99	0.31	0.36
Sodium, %	0.40	0.44	0.24	0.27
Potassium, %	0.65	0.73	0.31	0.34
Chloride, %	0.21	0.22	0.07	0.07
Magnesium, %	0.02	0.02	0.00	0.00
Vitamin E, IU/kg	520	380	200	200
Omega-3, %	0.14	0.14	0.0	0.0
Glucosamine, ppm	520.00	570.05	0.0	0.0

Case Examples

JM JOINT MOBILITY ESSENTIALS

INGREDIENTS: Whole Grain Corn, Chicken By-Product Meal, Flaxseed, Soybean Mill Run, Brewers Rice, Soybean Meal, Pork Fat, Powdered Cellulose, Chicken Liver Flavour, Fish Oil, Lactic Acid, Potassium Chloride, L-Lysine, Calcium Carbonate, Iodized Salt, Choline Chloride, DL-Methionine, Vitamin E Supplement, L-Ascorbyl-2-Phosphate (source of Vitamin C), Niacin Supplement, Thiamine Mononitrate, Vitamin A Supplement, Calcium Pantothenate, Vitamin B12 Supplement, Pyridoxine Hydrochloride, Riboflavin Supplement, Biotin, Folic Acid, Vitamin D3 Supplement, L-Theanine, minerals (Ferrous Sulfate, Zinc Oxide, Copper Sulfate, Manganese Oxide, Calcium Iodate, Sodium Selenite), Taurine, Glucosamine Hydrochloride, L-Threonine, L-Carnitine, Mixed Tocopherols for freshness, Chondroitin Sulfate, Natural Flavours, Beta-Carotene.

AVERAGE NUTRIENT CONTENTS

	As Fed ¹	Dry Matter ²	As Fed, Caloric Basis ³
Protein	17.7 %	19.2 %	5.0 g
Fat	15.1 %	16.4 %	4.2 g
Carbohydrate (NFE)	47.2 %	51.3 %	13.3 g
Crude Fibre	7.7 %	8.4 %	2.2 g
Calcium	0.58 %	0.63 %	163 mg
Phosphorus	0.45 %	0.5 %	127 mg
Potassium	0.18 %	0.20 %	51 mg
Sodium	0.73 %	0.79 %	205 mg
Magnesium	0.133 %	0.145 %	37 mg
Carnitine	321 mg/kg (ppm)	349 mg/kg (ppm)	90 mg
Vitamin E	512 IU/kg	557 IU/kg	14 IU/100kcal
Vitamin C	184 mg/kg	200 mg/kg	5.2 mg
EPA	0.415 %	0.451 %	116.7 mg
Alpha-Linolenic Acid (ALA)	2.31 %	2.51 %	649.4 mg
Total Omega-3 Fatty Acids	3.18 %	3.46 %	894 mg

METABOLIZABLE ENERGY

kcal/kg	3557	3866
kcal/cup	353	
Weight oz/cup	35	
g per lb	46	

% Caloric Basis: Protein 17, Fat 36, Carbohydrates 47

INGREDIENTS

DRY

JM[®] JOINT MOBILITY ESSENTIALS

INGREDIENTS: Whole Grain Corn, Chicken By-Product Meal, Flaxseed, Soybean Mill Run, Brewers Rice, Soybean Meal, Pork Fat, Powdered Cellulose, Chicken Liver Flavour, Fish Oil, Lactic Acid, Potassium Chloride, L-Lysine, Calcium Carbonate, Iodized Salt, Choline Chloride, DL-Methionine, Vitamin E Supplement, L-Ascorbyl-2-Phosphate (source of Vitamin C), Niacin Supplement, Thiamine Mononitrate, Vitamin A Supplement, Calcium Pantothenate, Vitamin B12 Supplement, Pyridoxine Hydrochloride, Riboflavin Supplement, Biotin, Folic Acid, Vitamin D3 Supplement, L-Theanine, minerals (Ferrous Sulfate, Zinc Oxide, Copper Sulfate, Manganese Oxide, Calcium Iodate, Sodium Selenite), Taurine, Glucosamine Hydrochloride, L-Threonine, L-Carnitine, Mixed Tocopherols for freshness, Chondroitin Sulfate, Natural Flavours, Beta-Carotene.

AVERAGE NUTRIENT CONTENTS

	As Fed ¹	Dry Matter ²	As Fed, Caloric Basis ³
Protein	17.7 %	19.2 %	5.0 g
Fat	15.1 %	16.4 %	4.2 g
Carbohydrate (NFE)	47.2 %	51.3 %	13.3 g
Crude Fibre	7.7 %	8.4 %	2.2 g
Calcium	0.58 %	0.63 %	163 mg
Phosphorus	0.45 %	0.5 %	127 mg
Potassium	0.18 %	0.20 %	51 mg
Sodium	0.73 %	0.79 %	205 mg
Magnesium	0.133 %	0.145 %	37 mg
Carnitine	321 mg/kg (ppm)	349 mg/kg (ppm)	90 mg
Vitamin E	512 IU/kg	557 IU/kg	14 IU/100kcal
Vitamin C	184 mg/kg	200 mg/kg	5.2 mg
EPA	0.415 %	0.451 %	116.7 mg
Alpha-Linolenic Acid (ALA)	2.31 %	2.51 %	649.4 mg
Total Omega-3 Fatty Acids	3.18 %	3.46 %	894 mg

METABOLIZABLE ENERGY

kcal/kg	3557	3866
kcal/cup	353	
Weight oz/cup	35	
g per lb	46	

% Caloric Basis: Protein 17, Fat 36, Carbohydrates 47

JM JOINT MOBILITY
CANINE FORMULA

Prescription Diet® j/d® Canine
Arthritis/Mobility Problems

3842 kcal/kg
1743 kcal/lb
408 kcal/8 oz (250 ml) cup

AVERAGE NUTRIENT CONTENT

	Per 100 kcal ME	As Fed	Dry Matter
Protein	8.07g	3.00%	33.67%
Fat	34.0g	13.05%	37.7%
Carbohydrate	25.5g	9.70%	26.4%
Crude Fibre	0.44g	1.66%	1.33%
Total Dietary Fibre	20.4g	7.84%	53.3%
Soluble Fibre	0.07g	0.26%	0.22%
Insoluble Fibre	1.97g	7.58%	8.4%
Calcium	0.31g	1.20%	0.83%
Phosphorus	0.24g	0.91%	0.5%
Potassium	0.17g	0.65%	0.20%
Sodium	0.03g	0.11%	0.04%
Chloride	0.18g	0.70%	0.29%
Magnesium	0.2g	0.80%	0.34%
Copper	0.40g	1.54 mg/kg	349 mg/kg (ppm)
Zinc	8.50mg	34.4 mg/kg	557 mg/kg
Vitamin A	833 IU	2337 IU/kg	2.51%
Vitamin D	2788 IU	1075 IU/kg	3.18%
Total Omega-3 Fatty Acids	0.54g	2.08%	3.46%
Total Omega-3 Fatty Acids	0.26g	0.94%	1.03%
Omega-3 DHA	0.18g	0.69%	0.75%
Omega-3 EPA	0.08g	0.31%	0.34%
Omega-3 AA	0.08g	0.31%	0.34%

METABOLIZABLE ENERGY

kcal/kg	3557	3.866
kcal/cup	353	
Weight (cup)	3.5	
Cups per lb	4.6	
% Calories from:	Protein 17	Fat 36
	Carbohydrates 47	

METABOLIZABLE ENERGY

kcal/kg	1,238	4,585
kcal/can 13 oz	458	
% Calories from:	Protein 11	Fat 48
	Carbohydrates 41	

AVERAGE NUTRIENT CONTENTS

	As Fed	Dry Matter ^a	As Fed, Caloric Basis ^b
Protein	3.2 g	33.7%	3.2 g
Fat	5.8 g	39.2%	5.8 g
Carbohydrate (NFE)	11.8 g	53.3%	11.8 g
Crude Fibre	0.1 g	8.4%	0.1 g
Calcium	170 mg	0.83%	170 mg
Phosphorus	48 mg	0.2%	48 mg
Sodium	40 mg	0.19%	40 mg
Potassium	81 mg	0.37%	81 mg
Magnesium	31 mg	0.1%	31 mg
Vitamin E	18 IU/100kcal	0.03%	18 IU/100kcal
Vitamin C	2.8 mg	0.01%	2.8 mg
Total Omega-3 Fatty Acids	420 mg	0.5%	420 mg

Prescription Diet® k/d® Canine
Kidney Disease
Cardiovascular Disease

As Fed, Caloric Basis¹

Protein	3.2 g
Fat	5.8 g
Carbohydrate (NFE)	11.8 g
Crude Fibre	0.1 g
Calcium	170 mg
Phosphorus	48 mg
Sodium	40 mg
Potassium	81 mg
Magnesium	31 mg
Vitamin E	18 IU/100kcal
Vitamin C	2.8 mg
Total Omega-3 Fatty Acids	420 mg

	k/d	RENAL SUPPORT D	RENAL SUPPORT E
Kcal/kg	1238 kcal/kg (458 kcal/13 oz can)	964 kcal/kg (371 kcal per 385 g can)	1677 kcal/kg (645 kcal per 385 g can)
Protein/Fat/CHO (% calories from)	11%/48%/41%	15%/56%/29%	12%/49%/39%
Protein	32 g/1000 kcal	41.5 g/1000 kcal	32.8 g/1000 kcal
Phosphorus	0.48 g/1000 kcal	0.8 g/1000 kcal	0.7 g/1000 kcal
Potassium	0.81 g/1000 kcal	1.8 g/1000 kcal	1.2 g/1000 kcal
Sodium	0.4 g/1000 kcal	1.2 g/1000 kcal	0.4 g/1000 kcal


Bonsai

- 7 yo MC Brussels Griffon
- Body weight - 4.14 kg
- BCS of 4/9
- History of pancreatitis
- Diagnosed with IBD




Diet History

- Currently eating:
- Hill's Prescription Diet i/d Low Fat, canned
- 1/2-3/4 can per day:




INGREDIENTS		CANNED	
i/d[®] Low Fat: Water, Pork Liver, Rice, Turkey Liver, Rice Flour, Pork By-Products, Whole Grain Corn, Turkey Heart, Egg Product, Flaxseed, Dried Beet Pulp, Oat Fibre, Calcium Carbonate, Chicken Liver Flavour, Soybean Oil, Ginger, Potassium Chloride, Sodium Tripolyphosphate, Choline Chloride, Iodized Salt, vitamins (Vitamin E Supplement, Ascorbic Acid (source of Vitamin C), Thiamine Mononitrate, Niacin Supplement, Pyridoxine Hydrochloride, Calcium Pantothenate, Vitamin B12 Supplement, Riboflavin Supplement, Biotin, Vitamin D3 Supplement, Folic Acid), Taurine, minerals (Zinc Oxide, Ferrous Sulfate, Copper Sulfate, Manganese Oxide, Calcium Iodate, Sodium Selenite), L-Carnitine, Beta-Carotene.			
AVERAGE NUTRIENT CONTENTS			
	As Fed ¹	Dry Matter ²	As Fed, Caloric Basis ³
Protein	6.5 %	25.1 %	6.9 g
Fat	2.2 %	8.5 %	2.3 g
Carbohydrate (NFE)	15.1 %	58.3 %	15.9 g
Crude Fibre	0.6 %	2.3 %	0.6 g
Calcium	0.19 %	0.73 %	200 mg
Phosphorus	0.14 %	0.5 %	148 mg
Sodium	0.10 %	0.39 %	105 mg
Potassium	0.22 %	0.85 %	232 mg
Magnesium	0.024 %	0.093 %	25 mg
Vitamin E	147 IU/kg	568 IU/kg	16 IU/100kcal
Vitamin C	29 mg/kg	112 mg/kg	3.1 mg
Total Omega-3 Fatty Acids	0.21 %	0.81 %	222 mg
METABOLIZABLE ENERGY			
kcal/kg	948	3,660	
kcal/can 13 oz	351		
% Calories from:	Protein 24	Fat 20	Carbohydrates 56

Diet History




- Currently eating:
- Hill's Prescription Diet i/d Low Fat, canned
- 1/2-3/4 can per day: provides 176-263 kcal/day
- 24% protein, 20% fat, and 56% carbohydrate on a ME basis

Diet History



- Currently eating:
- Hill's Prescription Diet i/d Low Fat, canned
- 1/2-3/4 can per day: provides 176-263 kcal/day
- 24% protein, 20% fat, and 56% carbohydrate on a ME basis
- When pancreatitis was diagnosed:
- Orijen Adult Dog, Six Fish Dog or Regional Red, dry
 - 1/2 cup/day =

Calorie content (calculated): ME 3940 kcal/kg, 449 kcal per 8oz. cup. Calories distributed to support peak conditioning with 39% from protein, 19% from vegetables and fruits, and 42% from fat.

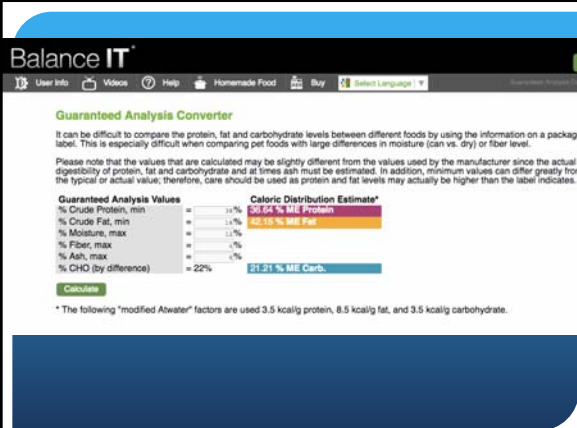


OCT 2016

GUARANTEED ANALYSIS
DESIGNED TO MIRROR MOTHER NATURE

Crude protein (min.)	38 %
Crude fat (min.)	18 %
Crude fiber (max.)	4 %
Moisture (max.)	12 %
Calcium (min.)	1.4 %
Phosphorus (min.)	1.2 %
Omega-6 fatty acids (min.)	2.3 %
Omega-3 fatty acids (min.)	2 %
DHA (min.)	1 %
EPA (min.)	0.6 %
Glucosamine (min.)	800 mg/kg
Chondroitin sulfate (min.)	600 mg/kg

AVAILABLE SIZES
12 OZ. / 4.5 LB. / 13 LB. / 25 LB.



Balance IT[®]

User Info Videos Help Homemade Food Buy Select Language

Guaranteed Analysis Converter

It can be difficult to compare the protein, fat and carbohydrate levels between different foods by using the information on a package's label. This is especially difficult when comparing pet foods with large differences in moisture (can vs. dry) or fiber level.


Please note that the values that are calculated may be slightly different from the values used by the manufacturer since the actual digestibility of protein, fat and carbohydrate and at times ash must be estimated. In addition, minimum values can differ greatly from the typical or actual values; therefore, care should be used as protein and fat levels may actually be higher than the label indicates.

Guaranteed Analysis Values	Caloric Distribution Estimate*
% Crude Protein, min	62.05% ME Protein
% Crude Fat, min	22.15% ME Fat
% Moisture, max	
% Fiber, max	
% Ash, max	
% CHO (by difference)	21.21% ME Carb.

Calculate

* The following "modified Atwater" factors are used: 3.5 kcal/g protein, 8.5 kcal/g fat, and 3.5 kcal/g carbohydrate.

Diet History



- Currently eating:
- Hill's Prescription Diet i/d Low Fat, canned
- 1/2-3/4 can per day: provides 176-263 kcal/day
- 24% protein, 20% fat, and 56% carbohydrate on a ME basis
- When pancreatitis was diagnosed:
- Orijen Adult Dog, Six Fish Dog or Regional Red, dry
 - 1/2 cup/day = 228-239 kcal per day
 - 35% protein, 41% fat, and 24% carbohydrate on a ME basis

HA HYDROLYZED[®] CANINE FORMULA **HYPOALLERGENIC HYDROLYZED PROTEIN**

3723 kcal/kg
1689 kcal/lb
311 kcal/8 oz (250 ml) cup

Calorie Content
Dry: Approximately 316 kcal/cup, 399.9 kcal/100 g (NRC 2006)
Approximately 299 kcal/cup, 378.9 kcal/100 g (NRC 85)
79 g/cup

Percentage of Metabolizable Energy from:
Protein, % 20.0
Fat, % 24.3
Carbohydrate, % 55.9

% Metabolizable Energy

- From Protein 42%
- From Fat 10%
- From Carbohydrate 39%

Dry

HA HYDROLYZED[®] CANINE FORMULA **HYPOALLERGENIC HYDROLYZED PROTEIN**

3723 kcal/kg
1689 kcal/lb
311 kcal/8 oz (250 ml) cup

Calorie Content
Dry: Approximately 316 kcal/cup, 399.9 kcal/100 g (NRC 2006)
Approximately 299 kcal/cup, 378.9 kcal/100 g (NRC 85)
79 g/cup

Percentage of Metabolizable Energy from:
Protein, % 20.0
Fat, % 24.3
Carbohydrate, % 55.9

% Metabolizable Energy

- From Protein 42%
- From Fat 10%
- From Carbohydrate 39%

Dry

HA HYDROLYZED[®] CANINE FORMULA **HYPOALLERGENIC HYDROLYZED PROTEIN**

3723 kcal/kg
1689 kcal/lb
311 kcal/8 oz (250 ml) cup

Calorie Content
Dry: Approximately 316 kcal/cup, 399.9 kcal/100 g (NRC 2006)
Approximately 299 kcal/cup, 378.9 kcal/100 g (NRC 85)
79 g/cup

Percentage of Metabolizable Energy from:
Protein, % 20.0
Fat, % 24.3
Carbohydrate, % 55.9

% Metabolizable Energy

- From Protein 42%
- From Fat 10%
- From Carbohydrate 39%

Dry

Prescription Diet[®] z/d[®] Canine

Adverse Reactions to Food & Inflammatory Skin Conditions

Gastrointestinal Disorders

METABOLIZABLE ENERGY

kcal/kg	3,569	3,879
kcal/cup	Regular: 354	Small Bites: 374
Weight oz/cup	Regular: 3.5	Small Bites: 3.7
Cups per lb	Regular: 4.6	Small Bites: 4.3

% Calories from: Protein 17, Fat 32, Carbohydrates 51

Bonsai


- 7 yo MC Brussels Griffon
- Body weight - 4.14 kg
- BCS of 4/9
- History of pancreatitis
- Diagnosed with Stage II, NP, NH CKD....

	k/d	RENAL SUPPORT	RENAL SUPPORT E
Kcal/kg	1238 kcal/kg (458 kcal/13 oz can)	964 kcal/kg (371 kcal per 385 g can)	1677 kcal/kg (645 kcal per 385 g can)
Protein/Fat/CHO (% calories from)	11%/48%/41%	15%/56%/29%	12%/49%/39%
Protein	32 g/1000 kcal	41.5 g/1000 kcal	32.8 g/1000 kcal
Phosphorus	0.48 g/1000 kcal	0.8 g/1000 kcal	0.7 g/1000 kcal
Potassium	0.81 g/1000 kcal	1.8 g/1000 kcal	1.2 g/1000 kcal
Sodium	0.4 g/1000 kcal	1.2 g/1000 kcal	0.4 g/1000 kcal

Prescription Diet[®] g/d[®] Canine

- Kidney Disease**
- Cardiovascular Disease**

INGREDIENTS		CANNED	
<p>g/d: Water, Corn Flour, Pork Liver, Rice, Pork By-Products, Turkey, Chicken Liver Flavour, Dried Beet Pulp, Flaxseed, Chicken Fat, Calcium Carbonate, Choline Chloride, Potassium Chloride, vitamins (Vitamin E Supplement, Thiamine Mononitrate, Ascorbic Acid (source of Vitamin C), Niacin Supplement, Calcium Pantothenate, Vitamin B12 Supplement, Pyridoxine Hydrochloride, Biotin, Riboflavin Supplement, Vitamin D3 Supplement, Folic Acid), Iodized Salt, Taurine, minerals (Zinc Oxide, Ferrous Sulfate, Manganese Sulfate, Copper Sulfate, Calcium Iodate), Beta-Carotene.</p>			
<p>AVERAGE NUTRIENT CONTENTS</p>			
	As Fed ¹	Dry Matter ²	As Fed, Caloric Basis ³
Protein	5.1 %	18.5 %	4.9 g
Fat	2.9 %	10.5 %	2.8 g
Carbohydrate (NFE)	17.9 %	64.9 %	17.1 g
Crude Fibre	0.5 %	1.8 %	0.5 g
Calcium	0.21 %	0.76 %	200 mg
Phosphorus	0.11 %	0.4 %	105 mg
Sodium	0.06 %	0.22 %	57 mg
Potassium	0.20 %	0.72 %	191 mg
Magnesium	0.019 %	0.069 %	18 mg
Vitamin E	216 IU/kg	783 IU/kg	21 IU/100kcal
Vitamin C	36 mg/kg	130 mg/kg	3.4 mg
Total Omega-3 Fatty Acids	0.19 %	0.69 %	181 mg
METABOLIZABLE ENERGY			
kcal/kg	1,049	3,801	
kcal/can 13 oz	388		
% Calories from:	Protein 17	Fat 23	Carbohydrates 60

	k/d		g/d
Kcal/kg	1238 kcal/kg (458 kcal/13 oz can)	3940 kcal/kg (449 kcal per cup)	1049 kcal/kg (388 kcal per 13 oz can)
Protein/Fat/CHO (% calories from)	11%/48%/41%	39%/42%/19%	17%/23%/60%
Protein	32 g/1000 kcal		49 g/1000 kcal
Phosphorus	0.48 g/1000 kcal	3.0 g/1000 kcal (minimum)	1.05 g/1000 kcal
Potassium	0.81 g/1000 kcal		1.91 g/1000 kcal
Sodium	0.4 g/1000 kcal		0.57 g/1000 kcal

	k/d	i/d Low Fat	g/d
Kcal/kg	1238 kcal/kg (458 kcal/13 oz can)	948 kcal/kg (351 kcal per can)	1049 kcal/kg (388 kcal per 13 oz can)
Protein/Fat/CHO (% calories from)	11%/48%/41%	24%/20%/56%	17%/23%/60%
Protein	32 g/1000 kcal	69 g/1000 kcal	49 g/1000 kcal
Phosphorus	0.48 g/1000 kcal	1.48 g/1000 kcal (minimum)	1.05 g/1000 kcal
Potassium	0.81 g/1000 kcal	2.32/1000 kcal	1.91 g/1000 kcal
Sodium	0.4 g/1000 kcal	1.0 g/1000 kcal	0.57 g/1000 kcal

Questions?

