

SUMMARY

ROYAL CANIN Veterinary Diet™^{TM/MC} canine LOW FAT LF™^{TM/MC} (canned) and LOW FAT LF 20™^{TM/MC} (dry) are highly digestible, palatable, complete, and balanced dog foods highly restricted in fat, formulated to aid in the management of chronic diarrhea, gastrointestinal disease, and pancreatic disease in dogs and puppies.

INDICATIONS

- Acute and chronic diarrhea in dogs and puppies
- Exocrine pancreatic insufficiency
- Acute and chronic pancreatitis
- Small intestinal bacterial overgrowth (SIBO)
- Malabsorption syndrome
- Lymphangiectasia
- Gastroenteritis
- Bile acid deficiency
- Hypertriglyceridemia
- Hypermotility
- Hypomotility
- Intestinal parasites (e.g., giardia, worms)
- Diarrhea due to dietary indiscretion
- Short bowel syndrome

CONTRAINDICATIONS

- None

NUTRITIONAL DIFFERENCES

(as compared to typical commercial pet foods)

- Restricted fat content (less than 16% ME from fat with adequate essential fatty acid levels to meet the requirements for canine growth and maintenance)
- Moderate levels of high quality, highly digestible protein
- Highly digestible carbohydrate
- Low fiber content
- Lactose free
- Enhanced zinc, copper, and B-vitamin levels
- Enriched with antioxidants



RATIONALE

Of the energy-providing nutrients, fat is the most difficult to digest. Fat absorption is easily disrupted when gastrointestinal function is sub-optimal. Restriction of dietary fat reduces the challenge to an already compromised gastrointestinal tract.

A deficiency of pancreatic enzymes (as occurs with exocrine pancreatic insufficiency and pancreatitis) impairs digestion and results in malabsorption of dietary nutrients. Although the digestion of protein and carbohydrate will be affected, the digestion of fat is most severely impaired since lipases are absent from the normal array of intestinal brush border enzymes.

Bacteria in the intestinal tract can metabolize undigested fat to hydroxy-fatty acids that can lead to secretory diarrhea in the large intestine. Bacteria also deconjugate bile acids further impairing fat digestion and absorption. For this reason, fat restriction is beneficial for conditions where fat may become available for microbial metabolism, for example in malabsorption syndrome, small intestinal bacterial overgrowth, bile acid deficiency, and/or gastroenteritis.

Unlike amino acids and monosaccharides which are absorbed directly into the blood stream, fat is discharged from enterocytes into lacteals and is transported to the systemic circulation via mesenteric lymph vessels and the thoracic duct. Lymphangiectasia, a disorder characterized by congestion and/or dilatation of lymphatic vessels, will impair fat transport. LOW FAT LF^{TM/MC} (canned) and LOW FAT LF 20^{TM/MC} (dry) are highly restricted in fat providing less than 16% of metabolizable energy from fat.

LOW FAT LF^{TM/MC} (canned) and LOW FAT LF 20^{TM/MC} (dry) contain moderate levels of highly digestible protein to meet the needs of dogs suffering from protein malabsorption or protein-losing enteropathy. The carbohydrates are highly digestible and do not contain lactose.

Since diarrhea can lead to loss of B-complex vitamins, B vitamin levels are enhanced. Exocrine pancreatic insufficiency can result in an inadequate uptake of zinc and copper, hence, zinc and copper levels are enhanced.

A clinical study with 48 dogs was conducted at the University of Edinburgh, Department of Veterinary Clinical Studies. All dogs presented with chronic diarrhea that had persisted despite aggressive drug and dietary management. Dogs were categorized into 5 groups: EPI, SIBO, malabsorption syndrome, colitis, and idiopathic diarrhea. All dogs were started on LOW FAT LF^{TM/MC} (canned) and 14 parameters of GI function were measured monthly for 5 months.

A significant improvement in body weight, appetite, drinking habits, demeanor, coat condition, skin condition, fecal appearance, consistency and frequency of defecation, and a reduction in vomiting and coprophagia were reported.

Special Tips:

- Compare the fat content (i.e., grams fat/1000 kcal) of the different diets designed for managing gastrointestinal disease in dogs. All claim to be restricted in fat but they typically contain 33-50% more fat compared to ROYAL CANIN Veterinary Diet^{TM/MC} canine LOW FAT LF^{TM/MC} (canned) and LOW FAT LF 20^{TM/MC} (dry). Only LOW FAT LF^{TM/MC} (canned) and LOW FAT LF 20^{TM/MC} (dry) are truly low fat diets.
- LOW FAT LF^{TM/MC} (canned) uses fish as a source of protein. Fish is a high quality source of protein yet contains very little fat. Advise owners in advance so that they will anticipate the fish texture and odor of this diet.



GENERAL FEEDING RECOMMENDATIONS

- Daily feeding recommendations may be divided into two to four meals.
- Fresh water should be available at all times.
- Individual requirements may vary depending on breed, age, sex, environment, and activity level.

FEEDING GUIDE

FEEDING RECOMMENDATIONS FOR ADULT DOG MAINTENANCE

Body Weight		Suggested Caloric Intake kcal/day	Daily Feeding	
lb	kg		Canned Only (cans/day)	Dry Only (8-oz cups/day)
5	2.3	231	2/3	1
10	4.5	389	1	1 2/3
20	9.1	653	1 2/3	2 3/4
30	13.6	886	2 1/3	3 3/4
40	18.1	1099	2 3/4	4 3/4
50	22.7	1299	3 1/3	5 2/3
60	27.2	1489	4	6 1/2
70	31.8	1672	4 1/2	7 1/3
80	36.3	1848	5	8
90	40.8	2019	5 1/3	8 3/4
100	45.4	2185	5 3/4	9 1/2
110	49.9	2347	6 1/4	10 1/4
120	54.4	2505	6 2/3	11
130	59.0	2660	7	11 2/3
140	63.5	2812	7 1/2	12 1/4
150	68.0	2961	7 3/4	13



CANINE

FEEDING GUIDE FOR PUPPIES – CANNED ONLY

Adult Weight of Dog		Age of Puppy in Months Cans per day												
lb	kg	2	3	4	5	6	7	8	10	12	14	18	22	24
5	2.27	2/3	2/3	2/3	2/3	2/3	2/3	2/3	2/3	2/3	2/3	2/3	2/3	2/3
10	4.54	1	1	1	1	1	1	1	1	1	1	1	1	1
20	9.08	1 1/2	1 3/4	1 3/4	2	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4
30	13.6	2	2 1/3	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/2	2 1/3	2 1/3	2 1/3	2 1/3	2 1/3
40	18.2	2 1/2	3	3	3 1/4	3 1/4	3	3	3	3	3	3	3	3
50	22.7	2 3/4	3 1/3	3 2/3	3 3/4	3 3/4	3 2/3	3 2/3	3 1/2	3 1/2	3 1/2	3 1/2	3 1/2	3 1/2
60	27.2	3	3 3/4	4	4 1/4	4 1/3	4 1/4	4 1/4	4	4	4	4	4	4
70	31.8	3 1/4	4	4 1/2	4 2/3	4 3/4	4 3/4	4 3/4	4 2/3	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2
80	36.3	3 1/4	4 1/3	5	5 1/4	5 1/3	5 1/3	5 1/4	5 1/4	5	5	5	5	5
90	40.9	3 1/2	4 3/4	5 1/3	5 2/3	5 3/4	5 3/4	5 3/4	5 2/3	5 1/2	5 1/2	5 1/2	5 1/2	5 1/2
100	45.4	4	5 1/4	5 3/4	6 1/4	6 1/4	6 1/3	6 1/4	6 1/4	6	6	6	6	6
110	49.9	4 2/3	5 3/4	6 1/3	6 2/3	6 3/4	6 3/4	6 3/4	6 2/3	6 1/2	6 1/2	6 1/3	6 1/3	6 1/3
120	54.5	4 3/4	6	6 2/3	7	7 1/4	7 1/4	7 1/4	7	7	7	6 3/4	6 3/4	6 3/4
130	59	5	6 1/3	7	7 1/3	7 2/3	7 2/3	7 2/3	7 1/2	7 1/3	7 1/3	7 1/4	7 1/4	7 1/4
140	63.6	5	6 2/3	7 1/3	7 3/4	8	8	8	8	8	7 3/4	7 2/3	7 2/3	7 2/3
150	68.1	5	6 3/4	7 2/3	8 1/4	8 1/3	8 1/2	8 1/2	8 1/2	8 1/3	8 1/4	8 1/4	8	8

FEEDING GUIDE FOR PUPPIES – DRY ONLY

Adult Weight of Dog		Age of Puppy in Months 8 oz cups per day												
lb	kg	2	3	4	5	6	7	8	10	12	14	18	22	24
5	2.27	1	1	1	1	1	1	1	1	1	1	1	1	1
10	4.54	1 1/2	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4
20	9.08	2 1/2	3	3	3	3	3	3	3	3	3	3	3	3
30	13.6	3 1/3	4	4 1/4	4 1/4	4 1/4	4 1/4	4	4	4	4	4	4	4
40	18.2	4	4 3/4	5	5 1/4	5 1/4	5 1/4	5	5	5	5	5	5	5
50	22.7	4 2/3	5 2/3	6	6 1/4	6 1/4	6	6	6	5 3/4	5 3/4	5 3/4	5 3/4	5 3/4
60	27.2	5	6 1/4	6 3/4	7	7	7	7	6 3/4	6 2/3	6 2/3	6 2/3	6 2/3	6 2/3
70	31.8	5 1/4	6 1/2	7 1/3	7 3/4	8	8	7 3/4	7 2/3	7 1/2	7 1/2	7 1/2	7 1/2	7 1/2
80	36.3	5 1/3	7	8	8 1/2	8 3/4	8 3/4	8 2/3	8 1/2	8 1/3	8 1/4	8 1/4	8 1/4	8 1/4
90	40.9	6	7 3/4	8 3/4	9 1/3	9 1/2	9 1/2	9 1/2	9 1/3	9 1/4	9	9	9	9
100	45.4	6 1/2	8 2/3	9 1/2	10	10 1/3	10 1/3	10 1/3	10 1/4	10	9 3/4	9 3/4	9 3/4	9 3/4
110	49.9	7 2/3	9 1/2	10 1/3	11	11	11 1/4	11	11	10 3/4	10 2/3	10 1/2	10 1/2	10 1/2
120	54.5	8	10	11	11 1/2	11 3/4	12	12	11 2/3	11 1/2	11 1/3	11 1/4	11 1/4	11 1/4
130	59	8 1/4	10 1/2	11 2/3	12 1/4	12 1/2	12 2/3	12 2/3	12 1/2	12 1/4	12	12	11 3/4	11 3/4
140	63.6	8 1/4	10 3/4	12	12 3/4	13 1/4	13 1/3	13 1/3	13 1/4	13	12 3/4	12 2/3	12 2/3	12 1/2
150	68.1	8 1/3	11 1/4	12 1/2	13 1/3	13 3/4	14	14	14	13 2/3	13 1/2	13 1/3	13 1/3	13 1/4

PRODUCT DESCRIPTION

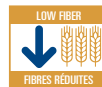
ROYAL CANIN Veterinary Diet™^{TM/MC} canine LOW FAT LF™^{TM/MC} is a very palatable, highly digestible, restricted fat diet formulated to meet requirements for growth and maintenance of dogs.

NUTRITION STATEMENT

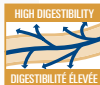
Animal feeding tests using AAFCO procedures substantiate that canine LOW FAT LF™^{TM/MC} provides complete and balanced nutrition for growth and maintenance.



Low fat concentration for easier digestion in dogs with intestinal disease and to minimize the clinical signs of pancreatitis.



A low fiber content ensures high digestibility and nutrient absorption.



Highly digestible ingredients compensate for decreased intestinal enzymatic activity ensuring optimal intake of nutrients.

GUARANTEED ANALYSIS

Crude Protein, (min)	8.0%
Crude Fat, (min)	1.3%
Crude Fat, (max)	3.0%
Crude Fiber, (max)	1.5%
Moisture, (max)	76.5%

METABOLIZABLE ENERGY

From Protein	31.2%
From Fat	16.3%
From Carbohydrate	52.5%

Approximately 377 kcal per 13.6 oz (385 g) can (98 kcal per 100 g).

INGREDIENTS

FISH, WATER, MEAT BY-PRODUCTS, RICE, CORN MEAL, CELLULOSE POWDER, GUAR GUM, TRACE MINERALS (POTASSIUM CHLORIDE, SODIUM TRIPOLYPHOSPHATE, FERROUS SULFATE, ZINC SULFATE, MANGANESE SULFATE, MAGNESIUM OXIDE, COPPER SULFATE, CALCIUM IODATE), NATURAL FLAVORS, VEGETABLE OIL, DL-METHIONINE, VITAMINS (CHOLINE CHLORIDE, DL-ALPHA TOCOPHEROL ACETATE [SOURCE OF VITAMIN E], THIAMINE MONONITRATE [VITAMIN B1], BIOTIN, D-CALCIUM PANTOTHENATE, NIACIN, VITAMIN A ACETATE, PYRIDOXINE HYDROCHLORIDE [VITAMIN B6], RIBOFLAVIN [VITAMIN B2], VITAMIN D3 SUPPLEMENT, FOLIC ACID, SELENIUM), TAURINE*.

*Not recognized as an essential nutrient by the AAFCO Dog Food Nutrient Profiles.



CANINE

TYPICAL ANALYSIS

Nutrient	Unit	Per 100 g as fed	Per 1000 kcal
Moisture	g	71.64	
Protein	g	9.06	92.45
Fat	g	1.95	19.9
Carbohydrate	g	15.24	155.51
Ash	g	2.11	21.53
Crude Fiber	g	0.85	8.67
Minerals			
Calcium	g	0.44	4.49
Phosphorus	g	0.39	3.98
Sodium	g	0.11	1.12
Chloride	g	0.30	3.06
Potassium	g	0.21	2.14
Magnesium	g	0.02	0.20
Copper	mg	0.74	7.52
Iron	mg	5.28	53.84
Zinc	mg	3.81	38.92
Manganese	mg	1.70	17.33
Iodine	mg	0.075	0.765
Vitamins			
Vitamin A	IU	1280	13061
Vitamin D3	IU	89.8	916.33
Vitamin E	mg	11.10	113.27
Thiamine (B1)	mg	0.4	4.10
Riboflavin (B2)	mg	0.60	6.12
Niacin	mg	3.12	31.84
Pyridoxine (B6)	mg	0.49	5.00
Pantothenic Acid	mg	1.46	14.90
Folic Acid	mg	0.080	0.816
Cobalamin (B12)	mg	0.0047	0.0480
Biotin	mg	0.03	0.31
Choline	mg	157	1602
Fatty Acids			
Linoleic acid	g	0.34	3.47
Amino Acids			
Arginine	g	0.56	5.57
Lysine	g	0.54	5.51
Methionine	g	0.31	3.16
Methionine + Cystine	g	0.40	4.08
Taurine	g	0.125	1.276



ORDERING INFORMATION

Can	Weight		Item Code
	oz	g	
24 per case	13.6	385	K60409

PRODUCT DESCRIPTION

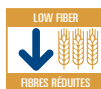
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NUTRITION STATEMENT

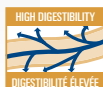
Animal feeding tests using AAFCO procedures substantiate that canine LOW FAT LF 20™^{TM/MC} provides complete and balanced nutrition for growth and maintenance.



Low fat concentration for easier digestion in dogs with intestinal disease and to minimize the clinical signs of pancreatitis.



A low fiber content ensures high digestibility and nutrient absorption.



Highly digestible ingredients compensate for decreased intestinal enzymatic activity ensuring optimal intake of nutrients.



Naturally preserved with mixed tocopherols, rosemary extract, and citric acid.

GUARANTEED ANALYSIS

Crude Protein, (min)	20%
Crude Fat, (min)	4%
Crude Fat, (max)	7.5%
Crude Fiber, (max)	6.7
Moisture, (max)	10.5

METABOLIZABLE ENERGY

From Protein	25.5%
From Fat	15.6%
From Carbohydrate	58.9%

Approximately 229 kcal per 8-oz cup; 346 kcal per 100 g; 66 g per cup.

INGREDIENTS

RICE, GROUND WHEAT, CHICKEN MEAL, CORN GLUTEN MEAL, CELLULOSE POWDER, NATURAL FLAVORS, CHICKEN FAT, DICALCIUM PHOSPHATE, POTASSIUM CHLORIDE, SODIUM CHLORIDE, CHOLINE CHLORIDE, MONOSODIUM PHOSPHATE, TAURINE*, L-LYSINE, VITAMINS [DL-ALPHA TOCOPHEROL ACETATE (SOURCE OF VITAMIN E), BIOTIN, D-CALCIUM PANTOTHENATE, NIACIN, PYRIDOXINE HYDROCHLORIDE (VITAMIN B6), VITAMIN A ACETATE, VITAMIN D3 SUPPLEMENT, THIAMINE MONONITRATE (VITAMIN B1), VITAMIN B12 SUPPLEMENT, RIBOFLAVIN (VITAMIN B2), FOLIC ACID], TRACE MINERALS [ZINC OXIDE, FERROUS SULFATE, COPPER SULFATE, MANGANOUS OXIDE, SODIUM SELENITE, CALCIUM IODATE], PRESERVED WITH NATURAL MIXED TOCOPHEROLS, ROSEMARY EXTRACT, AND CITRIC ACID.

*Not recognized as an essential nutrient by the AAFCO Dog Food Nutrient Profiles.



CANINE

TYPICAL ANALYSIS

Nutrient	Unit	Per 100 g as fed	Per 1000 kcal
Moisture	g	9	
Protein	g	22.0	63.7
Fat	g	6.0	17.4
Carbohydrate	g	50.9	147.3
Ash	g	7.4	21.4
Crude Fiber	g	4.7	13.6
Total Dietary Fiber	g	8.2	23.7
Minerals			
Calcium	g	1.15	3.33
Phosphorus	g	1.05	3.04
Sodium	g	0.45	1.30
Chloride	g	1.20	3.47
Potassium	g	0.75	2.17
Magnesium	g	0.08	0.23
Copper	mg	3.2	9.3
Iron	mg	14.5	42.0
Zinc	mg	24.5	70.9
Manganese	mg	8.0	23.1
Iodine	mg	0.47	1.36
Selenium	mg	0.033	0.095
Vitamins			
Vitamin A	IU	1800	5208
Vitamin D3	IU	150	434
Vitamin E	mg	24	69
Thiamine (B1)	mg	1.8	5.2
Riboflavin (B2)	mg	0.4	1.2
Niacin	mg	1.5	4.3
Pyridoxine (B6)	mg	0.9	2.6
Pantothenic Acid	mg	3.5	10.1
Folic Acid	mg	0.9	2.6
Cobalamin (B12)	mg	0.007	0.020
Biotin	mg	0.30	0.87
Choline	mg	300	868
Fatty Acids			
Linoleic acid	g	1.4	4.0
Arachidonic acid	g	0.02	0.06
Amino Acids			
Arginine	g	1.2	3.5
Lysine	g	0.9	2.6
Methionine	g	0.5	1.4
Methionine + Cystine	g	0.8	2.3
Taurine	g	0.2	0.6



ORDERING INFORMATION

Bag Size	Weight		Item Code
	lb	kg	
Small	n/a	n/a	n/a
Medium	5	2.27	28805
Large	16	7.26	28816
Extra Large	33	14.98	28833

REFERENCES

- Rutgers HC, Batt RM, Markwell PJ, et al. Probiotic treatment of dogs with small intestinal bacterial overgrowth. Proceedings of the ECVIM Forum: 1997, p160.
- Simpson JW, Maskell IE, Quigg J, et al. The long term management of canine exocrine pancreatic insufficiency. J Small Anim Pract 1994;35:133-138.

