

Introduction to the Veterinary Profession

Module 2 – Care and Welfare of domestic animals

Nutrition case study

Scenario 2: Goldie

Wrap-up

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Body condition scoring

BODY **1** SCORE

VERY THIN
< 5% body fat

Ribs – Easily felt with no fat cover
Tail Base – Bones are raised, no fat cover
Side View – Severe abdominal tuck
Overhead View – Accentuated hourglass shape

20% below ideal body weight

BODY **2** SCORE

UNDERWEIGHT
5-15% body fat

Ribs – Easily felt with little fat cover
Tail Base – Bones are raised with slight fat cover
Side View – Abdominal tuck
Overhead View – Marked hourglass shape

10% below ideal body weight

BODY **3** SCORE

IDEAL BODY WEIGHT
16-25% body fat

Ribs – Easily felt with slight fat cover
Tail Base – Some contour with slight fat cover
Side View – Abdominal tuck
Overhead View – Well-proportioned waist

Ideal body weight

BODY **4** SCORE

OVERWEIGHT
26-35% body fat

Ribs – Difficult to feel under moderate fat cover
Tail Base – Some thickening, bones palpable under moderate fat cover
Side View – No abdominal tuck
Overhead View – Back is slightly broadened at waist

10% above ideal body weight

BODY **5** SCORE

OBESE
> 35% body fat

Ribs – Difficult to feel under thick fat cover
Tail Base – Thickened and difficult to feel under thick fat cover
Side View – No waist, fat hangs from abdomen
Overhead View – Back is markedly broadened.

20% above ideal body weight



Current diet evaluation

- **Carbohydrate**

- Not considered a required nutrient – there is no recommended daily amount in dogs and it is not required to be stated on the packaging.
- Starch often 30-50% in dry dog food – used as a binding agent to form the kibble

- **Starch present in the diet of a wild dog?**

- Some muscle glycogen plus CHO from eating the stomach contents of prey.

- **% Protein levels**

- Lower in canned food because the moisture levels are much higher (75% in canned food vs 8.5% in dry food). Would be similar on a dry matter basis.

- **Evaluation of this diet:**

- 7.98 MJ is enough energy to maintain 43-44kg.
- also treats, dog biscuits and scraps are not included here.
- Excess of protein and fat, not much fibre.



Dry matter matters!

Guaranteed analysis		
Nutrient	Canned	Kibble
Protein	6.5 %	26 %
Fat	7 %	10 %
Fibre	1 %	8 %
Water	75 %	8.5 %

Dry Matter Basis		
Nutrient	Canned	Kibble
Protein	26 %	28 %
Fat	28 %	11 %
Fibre	4 %	8.7 %
Water	0 %	0 %

Footnote

“[Interpreting Pet Food Labels](#)“, Center for Veterinary Medicine, U. S. Food and Drug Administration [↩](#)

What are we looking for in a weight control diet?

- **Reduced energy**
 - Feeding less of an energy dense feed will mean that the dog remains hungry and begs for scraps etc. Therefore a less energy-dense food is desirable
- **Feed amount to provide sufficient energy for IDEAL WEIGHT**
 - Implications for rate of weight loss
- **Bulk out with FIBRE**
 - Fibre is commonly added to weight control diets in place of fats and starch in order to bulk out the feed.
 - Makes the animal feel satiated and reduces begging behaviour.
 - Lower glycaemic index than starch – less insulin produced (insulin blocks fat breakdown)
- **Adequate protein (high protein is OK) not too much fat.**

Feed calculation results

CANNED DIETS:

- **Chum:** 3 cans required for ME. low protein, v high fat. 42g fibre
- **Optimum:** 2.5 cans required for ME. Protein OK, vv high fat. 17.5g fibre
- **Advance (a weight control diet):** 3.5 cans required for ME (if fed alone). High in protein, fairly high in fat as well. **73.5g fibre** – would fill the dog up and prevent hunger, but labour intensive feeding 3.5 cans! (and expensive - \$18/day).
- **Crave:** would need to feed 4 cans per day (\$18), and would give very high protein and fat, and very little fibre (8g).
- **My Dog:** 2 cans per day (the most energy dense of the canned feeds). Adequate protein and fat but only 6.8g fibre. The dog may still be hungry.
- **Pedigree:** 2.5 cans per day. High in protein and fat, very little fibre (5.25g). Cheap, but dog may still be hungry.
- **Woolworths own brand:** 1.5 cans, but the cans are large (1.2kg). OK protein and fat, fibre 27g. Cheapest option but not suitable.
- **Nature's gift:** would need 4.5 small cans. V high protein and fat. 13.7g fibre.

Feed calculation results

DRY DIETS:

- **Supercoat** (designed as a healthy weight diet): 5.5 cups. High in protein, OK in fat. 35.75g fibre.
- **Optimum**: 5 cups. Excess protein and fat. 40g fibre.
- **Advance Healthy weight**: (designed as healthy weight diet). 5 cups. High protein, fat not too bad. High fibre though (60g). One of the higher energy densities at 345 kcal/100g, although most are fairly similar.
- **Baxters**: 5.5 cups. Excess protein and fat. 16.5g fibre. Cheapest (reportedly this diet is not very palatable).
- **Crave**: 4.5 cups. Most energy dense of the dry foods (392 kcals/100g). Very excessive protein and fat (and expensive). 15.75g fibre.
- **Pedigree adult dry food**. 5 cups. Higher protein and fat than required. 10g fibre.
- **Nature's goodness grain free**: 5 cups. V high in protein and fat. Low in fibre (15g).
- **Nature's gift**: 5 cups. High in protein and fat. Low in fibre (12.5g).
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- **Overall: most of the dry foods have similar energy density (around 335 kcal/100g).**
- Cost: all dry diets much cheaper than wet foods, so small differences not so important.

Chosen diet

- 1.5 cans wet food plus 2.5 cups dry food
- Provides 6.7 MJ ME per day, appropriate for ideal weight
- High in fibre (12% compared to previous diet 5%)
- Should be sufficient volume to make the dog feel full, and reduce begging.
- Should have lower glycaemic index
 - (starch levels not quoted but will be lower)
- Fairly high protein (26% DM)



How to work out carbohydrate content

- All dog foods contain the macronutrients:
 - proteins,
 - fats,
 - Carbohydrates (mostly fibre and starch)
 - Water
- Also contain ASH
 - (the residue when proteins, fats and carbs are burnt away)
 - Approx 8% of dry matter
- Carbohydrates are not usually listed (no requirement)

$$\text{CHO} = 100 - \% \text{protein} - \% \text{fat} - \% \text{ash}$$

- If fibre value is given,

$$\text{Starch/sugars} = 100 - \% \text{protein} - \% \text{fat} - \% \text{ash} - \% \text{fibre}$$

Monitoring

- Aiming for 1-3% weight loss per week
 - Don't want excessive weight loss – will get muscle loss
- Significant weight loss can take 12-15 weeks (warn owner)
- Body condition score may not change to begin with
 - Internal fat as well as external!
- Could use a 9-point BCS system rather than 5-point
- Could also record changes in girth measurements with a tape measure.