UNIVERSITI MALAYSIA KELANTAN

PALATABILITY ASSESSMENT OF THERAPEUTIC PET FOOD (URINARY CARE) IN HEALTHY CAT & DOG

By

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ABSTRACT

An abstract of the research paper presented to the Faculty of Veterinary Medicine, University Malaysia Kelantan, in complete requirements of the course DVT 55204 - Research Project.

The canine and feline lower urinary tract problems are a growing concern. However, for patients prescribed a urinary care diet, it is essential to ensure adequate palatability to support compliance with the therapeutic regimen. Therefore, this study aims to evaluate the palatability of a therapeutic urinary care pet food diet in healthy cats and dogs, addressing a critical determinant of successful dietary management for urinary health conditions. Although specialized urinary care diets provide well-documented clinical benefits, their effectiveness may be limited by poor palatability, which can result in reduced voluntary intake and inadequate owner compliance.

This experimental study compares the acceptance and preference of the urinary care diet against a conventional commercial diet in a sample of indoor cats and dogs in Malaysia. Using the two-bowl test over a controlled feeding trial period, palatability metrics including first approach, first consumption, intake ratio, and total consumption were evaluated. The study also considers behavioral differences in feeding between species and identifies sensory and compositional factors influencing diet preference.

The cats and dogs group were fed with a therapeutic diet and a commercial diet respective to their species for 7 days. The feeding trial is only conducted for 30 minutes each of the sessions in a day. The results demonstrated a significant and consistent preference for the therapeutic Urinary Care diet (Diet A) over the commercial diet (Diet B) in both species. This was evidenced by a significantly higher first approach (Cats: 65%, Dogs: 60%) and first consumption (Cats: 89%, Dogs: 94%). The overall intake ratio strongly favored Diet A, with cats consuming 86% and dogs consuming 95% of their total intake from the therapeutic diet. Furthermore, total consumption was significantly greater for Diet A, with cats and dogs consuming substantially more grams of the therapeutic diet compared to the control ($p<0.05$ for all tests). These findings indicate that the therapeutic urinary care diet exhibits superior palatability compared to the commercial control diet.

ABSTRAK

Satu abstrak kertas penyelidikan yang dikemukakan kepada Fakulti Perubatan Veterinar, Universiti Malaysia Kelantan, bagi memenuhi sepenuhnya keperluan kursus DVT 55204 - Projek Penyelidikan.

Masalah saluran kencing bahagian bawah dalam kalangan anjing dan kucing semakin membimbangkan. Bagaimanapun, bagi haiwan yang diberi diet terapi khas untuk penjagaan saluran kencing, adalah penting untuk memastikan diet tersebut mempunyai tahap kepalatapan yang mencukupi agar haiwan itu patuh kepada rejim terapeutik. Oleh itu, kajian ini bertujuan menilai kepalatapan makanan terapi penjagaan kencing untuk haiwan kesayangan pada kucing dan anjing yang sihat, dengan memberi tumpuan kepada faktor kritikal untuk kejayaan pengurusan pemakanan bagi masalah kesihatan berkaitan kencing. Walaupun diet penjagaan kencing khusus mempunyai manfaat klinikal, keberkesanannya sering tergugat oleh kepalatapan yang rendah, yang mengakibatkan pengambilan makanan secara sukarela yang kurang dan tahap pematuhan pemilik yang lemah.

Kajian eksperimen ini membandingkan penerimaan dan keutamaan diet penjagaan kencing berbanding diet komersial konvensional dalam sampel kucing dan anjing dalaman di Malaysia. Dengan menggunakan ujian dua mangkuk dalam tempoh percubaan pemberian makanan terkawal, metrik palatabiliti termasuk pendekatan pertama, pengambilan pertama, nisbah pengambilan, dan jumlah pengambilan telah dinilai. Kajian ini juga mempertimbangkan perbezaan tingkah laku

pemakanan antara spesies dan mengenal pasti faktor deria dan komposisi yang mempengaruhi keutamaan diet.

Kumpulan kucing dan anjing telah diberi diet terapeutik dan diet komersial masing-masing mengikut spesies mereka selama 7 hari. Percubaan pemberian makanan dijalankan hanya selama 30 minit bagi setiap sesi dalam sehari. Keputusan menunjukkan keutamaan yang signifikan dan konsisten terhadap diet Penjagaan Kencing terapeutik (Diet A) berbanding diet komersial (Diet B) pada kedua-dua spesies. Ini dibuktikan dengan pendekatan pertama (Kucing: 65%, Anjing: 60%) dan pengambilan pertama (Kucing: 89%, Anjing: 94%) yang jauh lebih tinggi. Nisbah pengambilan keseluruhan sangat memihak kepada Diet A, dengan kucing mengambil 86% dan anjing mengambil 95% daripada jumlah pengambilan mereka daripada diet terapeutik. Tambahan pula, jumlah pengambilan adalah jauh lebih besar untuk Diet A, dengan kucing dan anjing mengambil gram diet terapeutik yang lebih banyak berbanding kawalan ($p<0.05$ untuk semua ujian). Dapatan ini menunjukkan bahawa diet penjagaan urinari terapeutik mempunyai tahap keperluan rasa (palatabiliti) yang lebih tinggi berbanding diet komersial kawalan.

CERTIFICATION

This is to certify that we have read this research paper entitled "Palatability Assessment of Therapeutic Pet Food (Urinary Care) in Healthy Cat & Dog" by Foo Ru Zhi, and in our opinion, it is satisfactory in terms of scope, quality and presentation as partial fulfillment of the requirement for the course DVT 55204- Research Project.

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ABBREVIATION

BCS	Body Condition Score
BW	Body Weight
CBC	Complete Blood Count
DER	Daily Energy Requirement
DM	Dry Matter
g	gram
Kcal	kilocalorie
Kg	kilogram
LUTD	Lower Urinary Tract Disease
ME	Metabolizable Energy
p- value	Sig.

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CHAPTER 1

1.0 INTRODUCTION

The palatability of therapeutic pet food plays a crucial role in ensuring pet compliance and successful management of health conditions. Urinary Care diet is a veterinary therapeutic diet which is formulated to support urinary health in cats and dogs. However, the efficacy of the urinary still depends on voluntary consumption. Thus, making palatability a key factor in its acceptance by pets. The palatability of therapeutic diet (urinary care) is a critical factor in ensuring compliance and successful dietary management in cats and dogs with specific health conditions (Laflamme etal., 2008). Despite the nutritional benefits of a veterinary therapeutic diet, low acceptance due to poor palatability can hinder their effectiveness (Tôrres et al., 2013). This study is aiming to assess the palatability of Urinary Care diet. This study is done by evaluating voluntary intake and preference through controlled feeding trials, this research seeks to determine whether the product meets the palatability standard required for long term adherence. This finding will contribute to optimizing therapeutic diet formulation, in ensuring both clinical efficacy and pet acceptance.

1.1 RESEARCH PROBLEM

The pet food industry has seen significant growth, with increasing demand for therapeutic diets that address specific health conditions such as urinary care diets in cats and dogs. However, a critical challenge is to ensure the specialized therapeutic diets are not only nutritionally adequate but also highly palatable to encourage consistent consumption. Since therapeutic diets normally contain restricted ingredients or additives that may compromise taste. Palatability is a key determinant factor of pet food success. This is because poor acceptance can lead to reduced feed intake, which decreases the diet's health benefit and increases the risk of non-compliance among pet owners. This will reduce the efficacy of the therapeutic diet. Current palatability assessment methods such as the two-bowl test, primarily focus on general pet food rather than therapeutic diets. Thus, leaving gaps in understanding how health specific ingredients influence preference and acceptance. This study aims to evaluate the palatability of therapeutic diet (urinary care diet) in healthy cats and dogs, by comparing its acceptance and preference against the commercial diets, while identifying sensory and compositional factors that may enhance its appeal. The findings will provide useful insights for improving therapeutic pet food design, ensuring both nutritional efficacy and voluntary consumption.

I RESEARCH QUESTIONS

1. What is the palatability of urinary care therapeutic diet pet food compared to the conventional pet food in healthy cats and dogs?
2. Are there significant differences in palatability acceptance between cats and dogs when offered a urinary care therapeutic diet, and what factors influence their preference?
3. Does the urinary care therapeutic diet meet the nutritional appeal standards for long term feeding compliance in pets with urinary health concerns?

II RESEARCH HYPOTHESIS

H0: There is no difference in palatability between the urinary care therapeutic diet and the commercial control diet in healthy cats and dogs, as measured by first approach, first consumed, intake ratio, and total consumption.

H1: The urinary care therapeutic diet shows higher palatability than the commercial control diet in healthy cats and dogs, as measured by first approach, first consumed, intake ratio and total consumption.

III RESEARCH OBJECTIVES

1. The feeding trial aims to prove that Perfecta Urinary Special Care Diet can be safely used and well accepted by the animals in order to increase the willingness of pets to consume an adequate therapeutic diet and meet the therapeutic effect.
2. To prove that Perfect Urinary Special Care Diet can potentially attract the pet by aroma and flavor that increase their preference towards Perfecta Diet.

CHAPTER 2

LITERATURE REVIEW

2.1 OVERVIEW OF THERAPEUTIC FEED PALATABILITY TEST IN DOGS AND CATS IN MALAYSIA

In Malaysia, palatability testing for therapeutic pet foods commonly employs the two-bowl test method, a standard approach where animals are simultaneously offered two different diets in separate bowls (Ilias et al., 2022). This method allows researchers to observe preferences based on metrics such as first approach, first consumed, and total consumption over a fixed period and is widely used for both dogs and cats to assess acceptance and preference between various therapeutic diets (Animals, 2023). However, a gap exists, as no experimental trial has been conducted to compare the palatability of therapeutic diets directly against standard commercial diets.

In canine palatability testing, the two-bowl test involves offering two weighed portions of different diets simultaneously, recording the first choice and the quantity consumed (Tobie et al., 2015). To control for potential side bias, the position of the bowls is switched daily, and the test is typically repeated over multiple days to ensure reliable data (Wells, 2021).

For feline palatability testing, the process is often more meticulous due to the characteristically selective feeding behavior of cats (Animals, 2023). Studies on domestic shorthair cats have successfully utilized the two-bowl method for diets including struvite, renal, hypersensitivity, and intestinal formulations (Ilias et al., 2022). Key observations include "First Approached" and "First

Consumed," while "Total Consumption" and "Intake Ratio" are used as quantitative measures of diet acceptance (Ilias et al., 2022).

2.2 BEHAVIORAL VARIATION BETWEEN CATS AND DOGS ON THE THERAPEUTIC FEED PALATABILITY

Cats and dogs, both members of the order Carnivora, share a meat-eating classification but originate from distinct evolutionary branches—the domestic cat *(Felis catus*) from the Felidae family and the domestic dog (*Canis familiaris*) from the Canidae family (Bradshaw, 2006). Their nutritional needs and feeding behaviors, however, differ significantly (Bourgeois et al., 2006). Dogs, domesticated from the wolf (*Canis lupus*) thousands of years ago, are classified as facultative carnivores, meaning they can thrive on a diet of both animal and plant-based foods (Li et al., 2024). They are typically opportunistic, non-selective eaters, a trait that likely evolved from their scavenging history (Nature Communications, 2023).

In contrast, cats were domesticated later from the African wildcat (*Felis silvestris*) and are obligate carnivores, requiring animal-derived protein to prevent severe nutritional deficiencies (Li et al., 2024). They are solitary, intermittent hunters and are notably more selective in their food choices, capable of detecting small differences in food composition (Animals, 2023). These fundamental differences in their digestive and metabolic physiology make them essential, yet distinct, models for palatability assessment. While dogs show broad acceptance, their gluttonous eating style can challenge precise palatability measurement, whereas the finicky nature of cats makes them excellent detectors of subtle dietary changes (Animals, 2023).

2.3 ROLE OF URINARY DIET FORMULA

Urinary care diets mitigate Lower Urinary Tract Syndrome by promoting large, dilute urine volumes through elevated protein-driven osmotic diuresis, moderate sodium chloride inclusion (4.6% DM), and balanced potential renal solute load components (N, Na, Cl, P, K) (Felipe et al., 2024).

The other primary role of a urinary care diet is to modify urine composition to prevent uroliths by precisely controlling mineral and pH levels to reduce urolith risk (Felipe et al., 2024). Mineral balance is maintained by restricting magnesium to 0.07 - 0.14% DM, which acts as a calcium oxalate inhibitor, and by ensuring Calcium (0.6-1.0% DM) and phosphorus (0.5-0.9% DM) are in proper ratios to prevent imbalances that promote stone formation (Felipe et al., 2024). For urine pH management, acidifying ingredients such as DL-methionine and phosphoric acid are used for struvite prevention at a target pH < 6.6, while alkalinizing agents like potassium citrate are used for calcium oxalate prevention at a target pH of 6.8 - 7.5 (Felipe et al., 2024). The diet also includes specialized nutrients such as Vitamin B6 (> 8 mg/kg) to reduce endogenous oxalate production (Felipe et al., 2024). Omega-3 fatty acids (EPA/DHA) may help decrease urinary oxalate and calcium excretion, and Gamma-linolenic acid (GLA) from sources like evening primrose oil shows potential for reducing urinary calcium in other species (Felipe et al., 2024). Finally, urinary care diets promote beneficial microbial populations by utilizing highly digestible protein, with more than 85% digestibility at approximately 30% Crude Protein, to minimize undigested protein that could otherwise feed pathogenic bacteria (Felipe et al., 2024).

2.4 INGREDIENT AND NUTRIENT FOR INCREASING PALATABILITY IN URINARY THERAPEUTIC DIET

The ingredients that are added to a pet food or treat recipe to improve palatability are called palatants or palatability enhancers (Samant et al., 2021). These include animal digestion (protein broken down into smaller peptides), salt, yeast, whey, cheese powder, meat slurries, hydrolyzed vegetable protein, and specific amino acids such as L-lysine and L-cysteine (Profypet, n.d.). Monosodium glutamate is also used to stimulate umami taste receptors, which are particularly appealing to cats due to their strong affinity for umami flavours (Simmons Pet Food, 2022). Palatants often consist of a combination of protein, amino acids, fatty acids, peptides, vitamins, and minerals which are designed to enhance the sensory experience of the animal (MBRF Ingredients, n.d.). Animal protein hydrolysates created via the Maillard reaction and emulsified meats are especially effective in improving flavor and acceptance (Wang & Li, 2025). These palatants can be applied in both dry and wet foods, with wet foods generally having higher palatability due to moisture content and processing techniques (Simmons Pet Food, 2022).

Organic acids such as phosphoric acid, citric acid, fumaric acid, lactic acid, and ascorbic acid are commonly used as palatability enhancers in pet foods (AFB International, 2021). Phosphoric acid, when coated before fat in the coating sequence, can improve palatability without negatively impacting the therapeutic properties of the diet (Pancosma, 2014). Certain free amino acids such as L-lysine, L-phenylalanine, L-tyrosine, L-methionine, L-tryptophan, and L-arginine are known to enhance flavour and palatability in pet foods (Hill's Pet Nutrition, 2011). These amino acids can stimulate taste receptors and improve the sensory appeal of the diet, which is important for animals with reduced appetite due to urinary issues.

Natural flavour enhancers and animal digests, like poultry digest, fish digest, and other animal-derived flavour enhancers are often included to boost palatability by providing savory (umami) flavours that appeal to pets (Profypet, n.d.). Plant-derived ingredients like cranberries are frequently included in urinary therapeutic diets for their health benefits, such as preventing urinary tract infections. However, cranberry can impart a bitter and acidic taste which may reduce palatability if not balanced properly. Inclusion levels need to be carefully managed to maintain palatability while delivering therapeutic effects. Lastly, minerals and salts such as potassium citrate are used to manage urinary pH but also influence taste (Daudon, 2025; Frassetto & Kohlstadt, 2019). Their inclusion must be balanced to avoid negatively impacting palatability (Pak & Sakhaee, 2002).

2.5 DIFFERENCE BETWEEN URINARY CARE DIET AND COMMERCIAL DIET

The primary difference between urinary care diets and commercial diets for cats and dogs lies in their formulation and intended purpose. Urinary care diets are specially designed to manage and prevent urinary tract issues such as struvite crystals, bladder stones, and urinary tract infections (VCA Animal Hospitals, n.d.). These diets typically have controlled levels of minerals like magnesium, phosphorus, and calcium to reduce the risk of crystal and stone formation (National

Kidney Foundation, n.d.). They also aim to promote a specific urine pH, which is often more acidic to dissolve struvite stones or adjusted according to the type of urinary problem (The Pet Vet, n.d.). Additionally, urinary diets may have modified protein levels to reduce waste products that contribute to stone formation (Wang et al., 2021). These diets often include ingredients that increase water intake to dilute urine, which is a key factor in managing lower urinary tract diseases (LUTD) in both cats and dogs (Purina Pro Plan Vet Direct, n.d.).

In contrast, commercial diets are formulated for general nutrition and wellness without specific therapeutic goals. They may contain higher or uncontrolled levels of minerals and do not target urine pH or urinary health specifically. Moreover, some commercial or even prescription urinary diets, especially dry formulations, have been criticized for including ingredients such as chicken by-product meal, brewers rice, and corn gluten meal (The Pet Vet, n.d.). The addition of salt (sodium chloride) is sometimes used to stimulate thirst, a strategy which some argue may not align with optimal hydration strategies for cats, who naturally consume moisture primarily through wet food (PetScript Pharmacy, n.d.). Critics suggest that feeding dry prescription urinary diets with added salt to increase water intake may be counterintuitive and potentially contribute to other health issues like obesity or kidney disease if not carefully managed.

Hence, urinary care diets often come with veterinary endorsement and are priced higher due to their specialized formulation and clinical evidence supporting their use in dissolving or preventing urinary crystals and stones (Lulich et al., 2016). They may also include additional supplements such as glucosamine and chondroitin for joint support, which are not typically found in regular commercial diets (Johnson et al., 2020).

CHAPTER 3

3.0 MATERIALS AND METHODS

3.1 STUDY AREA

The research was undertaken in the Companion Animal Teaching and Learning Laboratory, which served as the primary site for all experimental procedures.

3.2 STUDY DESIGN

This study design was executed by providing both diet A (urinary care diet) and diet B (commercial diet) to clients that were within the targeted criteria mentioned in Malaysia. Clients were given diet A and diet B to be fed for 14 days for the feed acclimatization period and feed palatability assessment period. The choice of animals and intake amount were evaluated and recorded within 7 days during the palatability assessment period. This study was conducted as an experimental study.

Table 1: Nutritional analysis of Urinary Care Diet of Dogs and Cats

Figure 1: Urinary Care Diet (Dog)

Figure 2: Urinary Care Diet (Cat)

		
	Guaranteed Analysis	**Guaranteed Analysis**
Crude Protein % DM (min)	24%	31%
Crude Fat % DM (min)	14%	12%
Crude Fiber % DM (max)	3.5%	5%
Moisture % (max)	10%	6.5%

3.3 STUDY POPULATION

The study population includes 6 indoor dogs, and 6 indoor cats. Both groups were fed with diet A kibble and diet B kibbles according to their species.

3.4 SELECTION CRITERIA

3.4.1 Inclusion criteria

Inclusion criteria were small to medium size breed indoor dogs with a body condition score between 4/9 - 7/9, at least 1 year old, in healthy condition without underlying disease upon physical examination, CBC, serum biochemistry, and urinalysis. The dogs had to be indoor, with minimal exercise but not restricted in a cage.

The inclusion criteria for cats were indoor cats with a body condition score between 4/9 - 7/9, at least 1 year old, in healthy condition without underlying disease upon physical examination, CBC, serum biochemistry, and urinalysis. The cats had to be fully indoor, with minimal exercise but not restricted in a cage.

3.4.2 Exclusion criteria

The exclusion criteria for this study were the cats and dogs whose owners did not give their consent, animals that were not in healthy condition, pregnant or lactating dogs or expected to be during the trials. Those who had a history of adverse reaction towards food, animals that needed other therapeutic or prescription diets, animals that were scheduled for surgery during the trial period, and animals that were not in other clinical studies within the period of time.

3.5 SAMPLING TECHNIQUE

A recruitment poster was created and disseminated on social media to enroll six dogs and six cats suitable for this study. The selected animals underwent comprehensive preparation, including physical examination, complete blood count (CBC), serum biochemistry for liver and kidney function, and urinalysis. Prior to Day 0, baseline data were collected, including feed intake, daily fecal scores, and weekly body condition scores for both groups. Body weight and body condition scores were recorded according to the Snodgrass Veterinary Medical Center scoring chart. The animals′ indoor environments were assessed and their daily exercise levels staged. Additionally, feeding areas were arranged to be isolated from other pets in multi-animal households to ensure controlled feeding conditions.

3.6 SAMPLING PROCEDURE

Transitional Period: During this 7-day period, the animals′ diets were gradually transitioned to the new experimental diet. **Step 1:** The first seven days of the feed transition were planned according to the schedule shown in the table below, based on the recommendations of the Royal Canin feed transition chart. Day 0 of the study commenced following the completion of this transition. The overall feeding trial consisted of one week for the diet transition and one week for the formal feed trial.

Table 2: Royal Canin Feed Transition Chart

Day	Percentage old feed (%)	Percentage new feed (%)
1	75%	25%
2	75%	25%
3	50%	50%
4	50%	50%
5	25%	75%
6	25%	75%
7	0%	100%

Step 2: Following the transition period, Diet A and Diet B were provided to the animals according to the pre-calculated amounts. Owners were instructed to divide the daily ration into two meals, ensuring that fresh water was always available. The resting energy requirement (RER) was calculated using the formula: $RER = 70 \times BW^{0.75}$ (kg). During the trial period, the daily energy requirements for each animal were determined as outlined in the tables provided, with separate calculations for the cat and dog groups. The feed calculation for the dog group was performed accordingly.

Feed Calculation for dogs:

Species	Dog
Maintenance	(Neutered) DER = 1.6 x RER (Intact) DER= 1.8 x RER

Acute metabolizable energy (ME) of therapeutic diet (Dog):

Dog	343 kcal/100g

Feed Calculation for cats:

Species	Cat
Maintenance	(Neutered) DER = 1.2 x RER (Intact) DER= 1.4 x RER

Actual Metabolizable energy (ME) of therapeutic diet:

Cat	344 kcal/100g

Amount of diet A to be feed to the dog are calculated as DER ÷ ME

Table 3: Feed Calculation for Dogs

Example
10 kg intact dog RER = 70 x 20 $^{0.75}$ = 393 kcal/day DER maintenance = 1.8 x RER = 708 kcal/day Feed amount during maintenance = 708 kcal/day ÷ 343 kcal/100g = 207g/day

Amount of Diet A to be fed to the cats calculated as DER ÷ ME

Table 4: Feed Calculation for Cats

Example
5 kg neutered cat RER = 70 x 20 $^{0.75}$ = 234 kcal/day

DER during maintenance= 1.2 x RER = 281 kcal/day

Feed amount during maintenance = 281 kcal/day ÷ 344 kcal/100g = 82 g/day

Owner Compliance for trial group

Owners ensured that Diet A and Diet B were fed exclusively to the targeted animals, particularly in multi-pet households. During each feeding session, observations were limited to 30 minutes or until one of the diets was completely consumed. The animals were provided with only the recommended amounts of Diet A and Diet B, without exceeding the specified portions. No additional food, including treats, table scraps, or other pet food, was given during the trial period. Owners were also required to report any health issues or abnormalities observed in the targeted animals to the attending veterinarian.

3.7 DATA COLLECTION TOOLS

Table 5: Recruitment Checklist

Parameters	**Pass**	**Failed**
Physical examination (normal)		
Deworming status		
Vaccination status		

History of food allergy		
Lactating/ pregnant/ expected to be		
CBC (normal)		
Serum biochemistry (normal) Urinalysis (normal)		
Body weight		
BCS >6/9		
Age at least 1 years old		
Indoor		
Isolated feeding area		

Figure 3: Snograss Vetrinary Medical Center Body Condition Score Chart

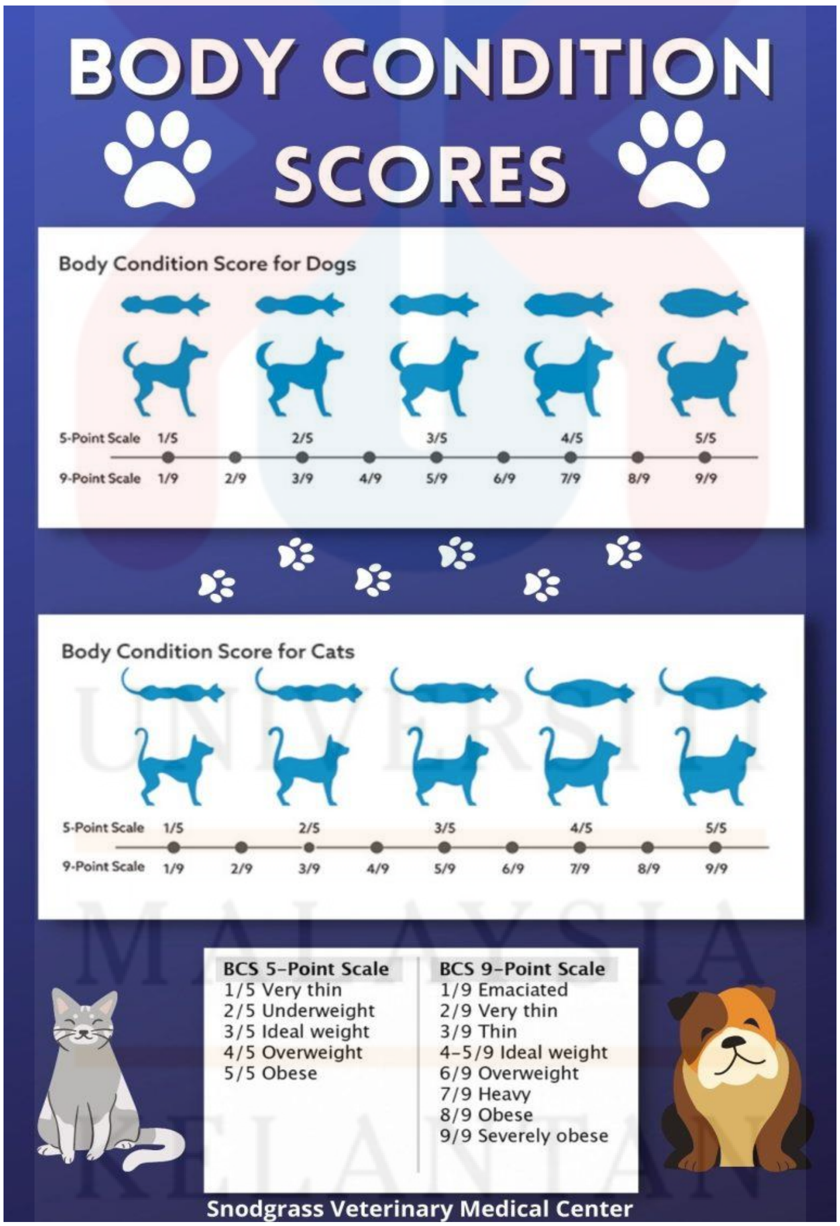

Figure 4: Royal Canin Fecal Score Chart

Assessment Rubric

Table 6: Assessment Rubrics

	Criteria				Points
	1	**2**	**3**	**4**	
First Approach	No preference, animals ignore both feeds	Animals shows no strong preference, approaching either feed in 25%-49% of trials	Animals' approaches feed A in 50%-74% of trials.	Animals' approaches feed A in > 75% of trials.	
First Consumed	Animals hesitates or avoid consuming either feed.	Animals shows no strong preference, consuming either feed (A/B) in 25%-49% of trials.	Animal consumes the either feed (A/B) first in 50-74% of trials.	Animals consistently consumes either feed first in >75% of trials.	
Intake ratio	Intake ratio consistently < 0.25 for the preferred feed or no clear preference	Intake ratio between 0.25-0.49, indicating minimal preference for one feed (A/B)	Intake ratio between 0.5-0.74 for the preferred feed. (A/B)	Intake ratio consistently > 0.75 of the preferred feed across trial (A/B)	

Quality of life	The animal is not active, depressed and avoid socializing with humans and other companion animals	The animal is not active, has a normal level of happiness, and reduced level of socializing with humans and other companion animals.	The animal is active, happy and good at socializing with humans and other companion animals.	The animal is hyperactive, very excited and very playful with humans and other companion animals.	
Total feed consumption	**No preference:** Total feed consumption for both feeds is nearly equal (each feed account for 45-55% of total intake)	**Slight preference:** Feed consumption for one feed is slightly higher (50-60% of total intake) compared to the other feed.	**Moderate preference:** Feed consumption for one feed is higher (60-75% of total intake) than the other feed.	**Strong preference:** Feed consumption for one feed is significantly higher (>75% of total intake) compared to the other feed.	
Hair Coat Quality	The hair coat become loose and start shedding	The hair coat remained the same as usual	The hair coat become thick and reduced shedding	The hair coat becomes thick, shiny and	

				minimal shedding.	

Table 7: First Approach and First Consumed Data

Day	**D1**	**D2**	**D3**	**D4**	**D5**	**D6**	**D7**
First Approach (A/B)							
First Consumed (A/B)							

Table 8: Intake Ratio and Total Feed Consumption (g) Data

Day	D1		D2		D3		D4		D5		D6		D7	
Intake Ratio	A	B	A	B	A	B	A	B	A	B	A	B	A	B
Total Feed Consumption (g)	A	B	A	B	A	B	A	B	A	B	A	B	A	B

3.8 DATA ANALYSIS

The data obtained from the cats and dogs that participated in the 7-day feed trial were analyzed. The numerical data, such as the total feed consumption and intake ratio, were evaluated. These continuous variables were usually analyzed by comparing means using a t test when comparing two diets, which were the commercial diet and the urinary care diet. Meanwhile, for the first approach and first consumption (A/B), these categorical preference data were typically analyzed using the Binomial test because these are binary choice outcomes (only Diet A or Diet B can be chosen first). The test determines if the observed distribution of these choices is statistically different from what we would expect by 50%. A significant result ($p<0.05$) confirms that the preference for one diet is real and not due to random selection.

CHAPTER 4

4.0 RESULTS

4.1 PHYSICAL EXAMINATION

Upon physical examination, all cats and dogs in the feed trial appeared normal, showing no signs of systemic diseases. The dogs were neither pregnant nor lactating, and there were no indications that they would be during the trials. Additionally, none of the dogs or cats had a history of adverse reactions to food. None of the participating dogs required other therapeutic diets or exceptional care, nor were any scheduled for surgery during the trial period. Furthermore, the dogs had not been involved in any other clinical studies during that time.

4.2 PREFERENCE ASSESSMENT BASED ON FIRST APPROACH AND FIRST CONSUMTION

For the first approach and first consumed results (Table 9 and Table 10), the results based on the data analysis demonstrated a clear and significant preference for diet A over diet B in both species. In cats, diet A was approached first in 65% of feeding trials, a distribution that was statistically significant from a chance level 50% according to a Binomial test ($p=0.006$). Similarly, cats consumed Diet A first in 89% of the trials ($p=0.001$). An even stronger preference was observed in dogs, which approached Diet A first in 60% of the trials, ($p <0.05$) and first consumption in 94% of the trials ($p<0.0001$). These results indicate that Diet A possessed superior olfactory appeal and immediate acceptability upon initial presentation.

Table 9: First Approach Data Analysis Results

Species	Variable	Total Number of Observations (N)	Observed Proportion for Diet A	Observed Proportion for Diet B	Test Proportion	p-value
Cat	First Approach	84	0.65	0.35	0.5	0.006
Dog	First Approach	84	0.6	0.4	0.5	0.040

Table 10: First Consumed Data Analysis Results

Species	Variable	Total Number of Observations (N)	Observed Proportion for Diet A	Observed Proportion for Diet B	Test Proportion	p-value
Cat	First Consumed	84	0.89	0.11	0.5	0.001
Dog	First Consumed	84	0.94	0.06	0.5	0.0001

4.3 OVERALL CONSUMPTION PREFERENCE BASED ON INTAKE RATIO

Table 11 showed the Overall Consumption Preference Based on Intake Ratio. The overall consumption preference, as measured by the intake ratio, consistently favored Diet A throughout the entire study period. A one sample t test revealed that the mean intake ratio for Diet A in cats was 0.86 (SD= 0.13), which was significantly greater than the test value 0.5 representing no preference. While dogs exhibited a more pronounced preference, with a mean intake 0.95 (SD= 0.06) for diet A, which was also significantly different from 0.5. This demonstrated that Diet A constituted 95% of the total intake for dogs, confirming a sustained preference beyond the initial choice.

Table 11: Intake Ratio Data Analysis Results

Species	Number of animals	Mean Intake Ratio (A)	Mean Intake Ratio (B)	Std. Deviation	Test Value	t-value	df	p-value
Cat	6	0.8603	0.1397	0.1346	0.5	15.65	5	0.001
Dog	6	0.9522	0.0478	0.0611	0.5	38.19	5	0.001

4.4 TOTAL FEED CONSUMPTION

The analysis of the total feed consumption (g) provided further evidence for the superior palatability of Diet A (Table 12). A paired sample test showed that cats consumed significantly greater amounts of Diet A (mean= 160g, SD= 93) compared to diet B (mean= 19.2g, SD= 12.35), with a mean difference of 140.8g (p=0.015). This pattern was replicated and magnified in dogs, which consumed significantly more Diet A (mean= 842.8g, SD= 197.04) than Diet B (mean= 48.7, SD= 71.05), with a substantial mean difference of 794.1g (p=0.001). The significant results for total consumption validate that the preference for the therapeutic diet was not only relative but also absolute resulting in a higher voluntary intake.

Table 12: Total Feed Consumption Data Analysis Results

Species	**Diet**	**Mean Consumption (g)**	**Std. deviation**	**t- value**	**df**	**p- value**
Cat	Diet A	160.00	93.00	3.64	5	0.015
	Diet B	19.20	12.35			
Dog	Diet A	842.80	197.04	10.50	5	0.001
	Diet B	48.70	71.05			

CHAPTER 5

5.0 DISCUSSION

The clinical success of a veterinary therapeutic diet, such as the Urinary Care therapeutic formulation used in this study, is contingent upon consistent voluntary intake by the animals. Despite being nutritionally complete for managing specific conditions, its therapeutic efficacy is ultimately compromised if the food is rejected due to poor palatability (Tôrres et al., 2013). Therefore, palatability is not merely a matter of preference but a critical determinant of owner compliance and long-term dietary management success (Laflamme et al., 2008). The present study directly addressed this prerequisite by evaluating the voluntary intake and preference of the Urinary Care diet in healthy cats and dogs. The findings regarding its palatability are thus essential for gauging its potential for real-world adherence and, consequently, its overall clinical effectiveness.

5.1 SUPERIOR PALARABILITY OF THE THERAPEUTIC DIET

The consistent preference for the therapeutic Urinary Care diet across all measured metrics is a noteworthy finding. The higher rate of first approach suggests that the diet possesses a more potent or appealing aroma, which is the primary factor in a pet's initial investigation of food (Félix et al., 2018). The subsequent higher incidence of first consumption indicates that this initial olfactory appeal successfully translated into a decision to ingest. Most importantly, the significantly higher intake ratio and total consumption for the therapeutic diet provide robust evidence of sustained preference throughout the test period, moving beyond initial attraction to overall acceptability (Aldrich & Koppel, 2015). This superior palatability can likely be attributed to specific formulation strategies employed in veterinary diets. Manufacturers often incorporate high-value palatability enhancers, such as animal protein hydrolysates, digest sprays, and optimized fat coatings, to overcome potential taste deficiencies arising from nutritional modifications necessary for urinary health, such as reduced mineral content and controlled pH (Tôrres et al., 2013). The success of the therapeutic diet in this trial suggests these strategies were highly effective.

5.2 PALATABILITY AFFECTING THE EFFECTIVENESS OF THERAPEUTIC DIET

The superior palatability of the therapeutic Urinary Care diet, as demonstrated by its significantly higher intake ratio and total consumption compared to the commercial diet, is not merely a matter of preference but a critical determinant of its clinical effectiveness. The efficacy of any veterinary therapeutic diet is entirely contingent upon consistent and long-term voluntary intake by the patient, as its nutritional benefits cannot be realized if the food is refused (Tôrres et al., 2013). A common challenge in dietary management is owner non-compliance, which is frequently driven by the pet's rejection of an unpalatable therapeutic formula, leading to the abandonment of the prescribed nutritional strategy (Laflamme et al., 2008). The finding that this specific Urinary Care diet was more palatable than a standard commercial diet directly addresses this central hurdle. Its high acceptability suggests a strong potential to enhance owner adherence and ensure sustained consumption in clinical patients. Therefore, the palatability of this diet serves as a fundamental prerequisite for its success, ensuring that the formulated benefits—such as the dissolution and prevention of uroliths through controlled mineral content and urine pH—are fully translated from theory into practical, positive health outcomes.

5.3 PALATABILITY IN HEALTHY ANIMALS AND CLINICAL SUCCESS

A pivotal implication of this study is that the high palatability of a therapeutic diet in healthy animals is a strong positive predictor of its potential for successful long-term use in clinical patients. It is well-established that the clinical efficacy of a veterinary therapeutic diet is entirely dependent on consistent voluntary intake by the patient (Laflamme et al., 2008). Poor palatability is a leading cause of owner non-compliance, as the stress of convincing a pet to eat an unpalatable food often leads to abandonment of the prescribed diet (German et al., 2017). The finding that the Urinary Care diet was more palatable than a common commercial diet is therefore clinically encouraging. For pets requiring long-term management of urinary conditions, such as those prone to urolithiasis, a highly palatable therapeutic diet removes a significant barrier to adherence. This ensures that the patient receives the nutritional benefits—such as urine dilution and mineral control—without a struggle, thereby translating the diet's formulated efficacy into practical health outcomes.

5.4 COMPARATIVE RESULTS BETWEEN CATS AND DOGS GROUP

A nuanced analysis of the data reveals interesting interspecies differences in the expression of preference. While both cats and dogs demonstrated a significant overall preference for the therapeutic diet, the strength and nature of this preference varied. In this study, dogs exhibited a more pronounced difference in total consumption, which may reflect their general tendency for higher food motivation and less neophobia compared to cats. Conversely, cats, as obligate carnivores known for their dietary finickiness, often place a greater emphasis on specific macronutrients and aromas (Zaghini & Biagi, 2005). The fact that the therapeutic diet achieved a significant preference in cats is particularly compelling, as it indicates the formula successfully met the species' stringent sensory requirements. These differences underscore the critical importance of conducting separate, species-specific palatability testing, as acceptance in one species does not guarantee success in the other, and formulation strategies must be tailored accordingly.

In summary, the discussion confirms that the tested therapeutic Urinary Care diet possesses superior palatability compared to a standard commercial diet in healthy cats and dogs. This high acceptability is crucial for ensuring long-term adherence, which is a prerequisite for the diet's clinical success in managing urinary conditions. The findings effectively challenge the misconception that therapeutic foods are less palatable and highlight the importance of species-specific formulation and evaluation.

5.5 OWNER COMPLIANCE AND BEHAVIORAL ADAPTATION

The superior palatability of the therapeutic Urinary Care diet, as demonstrated by its higher intake ratio and preference over a commercial diet, has profound implications that extend beyond the pet's bowl to directly influence owner behavior and compliance. A fundamental challenge in veterinary nutritional management is the "translational gap" between a diet's clinical formulation and its real-world consumption. Veterinarians may prescribe an ideal nutritional solution, but its success is entirely dependent on the owner's ability and willingness to administer it consistently. When a pet refuses a therapeutic diet, it initiates a stressful cycle for the owner, characterized by food waste, coaxing behaviors, and the anxiety of watching their pet refuse food (German et al., 2017). This study's finding that the therapeutic diet is highly palatable, even when compared to a palatable commercial option, directly addresses this challenge. It suggests that prescribing this specific Urinary Care diet can preemptively circumvent the common frustrations associated with dietary transitions, thereby removing a significant barrier to initial owner compliance.

Furthermore, the high palatability of the therapeutic diet can positively reshape long-term owner feeding habits and attitudes. Owners whose pets readily accept a prescribed diet are more likely to perceive the dietary management as successful and sustainable, reinforcing their commitment to the treatment plan (Laflamme & Doren, 2021). In contrast, a pet's rejection of food often leads to maladaptive owner behaviors, such as "diet hopping" – frequently switching brands in a desperate attempt to find something the pet will eat – or topping the therapeutic food with high-value treats or other foods that can dilute its clinical efficacy (Forrester, 2022). The demonstrated preference for the Urinary Care diet mitigates this risk. By being the more desirable option, it empowers the owner to maintain dietary purity and consistency. This behavioral adaptation from a cycle of frustration to one of confident feeding is a critical, yet often overlooked, component of successful long-term disease management, particularly for chronic conditions like urinary health which require lifelong nutritional support.

Ultimately, the palatability of a therapeutic diet is a key determinant in the human-animal bond within a clinical context. Feeding time is a core interaction between owners and their pets, and resistance to food can strain this relationship. A diet that is eagerly consumed transforms a potential point of conflict into a positive, reinforcing experience. Therefore, the high palatability of this Urinary Care diet should not be viewed merely as a commercial feature but as an integral component of its clinical utility. By ensuring high voluntary intake, it enhances owner confidence, promotes stable and consistent feeding practices, and supports the human-animal bond, all of which are essential for achieving the desired therapeutic outcomes and improving the quality of life for both the pet and its owner (Tôrres et al., 2013).

5.6 LONG TERM CONSIDERATIONS AND FUTURE RESEARCH

While the results of this short-term, two-bowl preference test provide strong initial evidence for the superior palatability of the therapeutic Urinary Care diet, they inherently represent a snapshot in time. The critical challenge in veterinary therapeutic nutrition is not initial acceptance, but sustained adherence over months or even years. Therefore, the positive findings from this 7-day trial must be contextualized within the framework of long-term feeding. It is possible that the high-value palatability enhancers used in the therapeutic diet, while highly effective in the short term, could lead to sensory-specific satiety or flavour fatigue over extended periods (Houpt, 2011). Future research should therefore employ long-term single-bowl studies, tracking consumption and owner-reported satisfaction over several months to determine if the initial preference translates into consistent intake, which is the true benchmark of success for a chronic condition management diet.

To build upon the findings of this palatability assessment, a clear and logical pathway for future research is recommended. The most crucial next step is to validate these results in the target clinical population. Palatability can be significantly altered by the disease state itself, as well as by concomitant medications or age-related anosmia (Forrester, 2022). A controlled study involving cats and dogs with clinically diagnosed urinary conditions, such as urolithiasis or idiopathic cystitis, would provide more clinically relevant data on acceptance. Furthermore, such studies should integrate palatability metrics with key clinical outcome measures, including urine specific gravity, urine pH, and the presence of crystalluria or blood urea nitrogen levels. This would allow researchers to correlate high palatability and subsequent high intake with tangible improvements in health markers, thereby directly linking the diet's sensory properties to its therapeutic efficacy (Tôrres et al., 2013).

Finally, to gain a holistic understanding of a diet's real-world performance, future investigations should move beyond controlled laboratory settings. Implementing home-use tests with detailed owner questionnaires would yield invaluable qualitative data on perceived palatability, changes in water consumption, ease of feeding, and the pet's overall well-being and enthusiasm at mealtime (Laflamme et al., 2008). Combining this subjective, owner-derived data with the objective consumption data from clinical trials would create a comprehensive picture of how the diet performs in a home environment. This approach not only assesses the pet's acceptance but also evaluates owner compliance and satisfaction, which are ultimately the final determinants of whether a therapeutic nutritional plan is successfully maintained for the long-term health of the animal.

CHAPTER 6

6.1 CONCLUSION

This study successfully evaluated the palatability of a therapeutic urinary care diet in healthy cats and dogs using a controlled two-bowl preference test, and the findings demonstrated a clear and statistically significant preference for Diet A over Diet B across all measured indicators, including first approach, first consumption, intake ratio, and total consumption. The results confirmed that Diet A possessed superior palatability and was readily accepted by both species, indicating strong potential for overcoming the common challenge of initial diet refusal associated with therapeutic formulations. The high level of acceptance observed in this controlled setting suggests that Diet A may support improved long-term dietary adherence, which is critical for the clinical success of urinary nutritional management. The overall outcomes emphasize that palatability is not merely a measure of taste preference but a key determinant of voluntary intake and, consequently, therapeutic compliance.

6.2 RECOMMENDATIONS

The findings of this study support the recommendation that Diet A be considered a suitable and highly palatable option for veterinary practitioners when prescribing urinary care diets, as its demonstrated acceptance in healthy animals indicates potential for encouraging consistent consumption in clinical patients. It is also recommended that future studies validate these palatability outcomes in cats and dogs diagnosed with urinary tract disorders, as disease status, concurrent treatments, and age may influence feeding behaviour. Long-term feeding trials involving clinical patients should be conducted to assess adherence and therapeutic efficacy, with additional metrics including blood biochemical markers and detailed urinalysis used to correlate palatability driven intake with physiological improvements in urinary health. Furthermore, it is recommended that future research incorporate owner-reported assessments on palatability, ease of feeding, and changes in water intake and overall well-being within home environments to provide a more comprehensive and practical evaluation of the diet's performance. These recommendations aim to guide further scientific inquiry and improve clinical application in veterinary nutritional management.

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8.0 APPENDICES

Dog group Candidates

Candidate 1: Xiao Bai

Figure 5: Profile picture of Xiao Bai

Table 13: Recruitment Checklist for Xiao Bai

	Pass	Failed
Physical Examination (Normal)	**Pass**	
Deworming status	**Up To Date**	
Vaccination status	**Up To Date**	
History of food allergy	**No, Pass**	
Lactating/ pregnant/ expected to be	**No, Pass**	
CBC (normal)	**Pass**	

Serum biochemistry (normal) Urinalysis (normal)	**Pass**	
Body weight	**Pass**	
BCS > 6/9	**Pass**	
Age at least 1 years old	**Pass**	
Indoor	**Pass**	
Isolated feeding area	**Pass**	

Candidate 2: Bing Bing

Figure 6: Profile picture of Bing Bing

Table 14: Recruitment Checklist for Bing Bing

	Pass	Failed
Physical Examination (Normal)	**Pass**	
Deworming status	**Up To Date**	
Vaccination status	**Up To Date**	
History of food allergy	**No, Pass**	
Lactating/ pregnant/ expected to be	**No, Pass**	
CBC (normal)	**Pass**	
Serum biochemistry (normal)	**Pass**	

Urinalysis (normal)		
Body weight	Pass	
BCS > 6/9	Pass	
Age at least 1 years old	Pass	
Indoor	Pass	
Isolated feeding area	Pass	

Candidate 3: Ah Boy

Figure 7: Profile picture of Ah Boy

Table 15: Recruitment Checklist for Ah Boy

	Pass	Failed
Physical Examination (Normal)	Pass	

Deworming status	**Up To Date**	
Vaccination status	**Up To Date**	
History of food allergy	**No, Pass**	
Lactating/ pregnant/ expected to be	**No, Pass**	
CBC (normal)	**Pass**	
Serum biochemistry (normal) Urinalysis (normal)	**Pass**	
Body weight	**Pass**	
BCS > 6/9	**Pass**	
Age at least 1 years old	**Pass**	
Indoor	**Pass**	
Isolated feeding area	**Pass**	

Candidate 4: Nuan Nuan

Figure 8: Profile picture of Nuan Nuan

Table 16: Recruitment Checklist for Nuan Nuan

	Pass	Failed
Physical Examination (Normal)	**Pass**	
Deworming status	**Up To Date**	
Vaccination status	**Up To Date**	
History of food allergy	**No, Pass**	
Lactating/ pregnant/ expected to be	**No, Pass**	
CBC (normal)	**Pass**	
Serum biochemistry (normal)	**Pass**	

Urinalysis (normal)		
Body weight	**Pass**	
BCS > 6/9	**Pass**	
Age at least 1 years old	**Pass**	
Indoor	**Pass**	
Isolated feeding area	**Pass**	

Candidate 5: Pui Pui

Figure 9: Profile picture of Pui Pui

Table 17: Recruitment Checklist for Pui Pui

	Pass	Failed

Physical Examination (Normal)	**Pass**	
Deworming status	**Up To Date**	
Vaccination status	**Up To Date**	
History of food allergy	**No, Pass**	
Lactating/ pregnant/ expected to be	**No, Pass**	
CBC (normal)	**Pass**	
Serum biochemistry (normal) Urinalysis (normal)	**Pass**	
Body weight	**Pass**	
BCS > 6/9	**Pass**	
Age at least 1 years old	**Pass**	
Indoor	**Pass**	
Isolated feeding area	**Pass**	

Candidate 6: Ah Girl

Figure 10: Profile picture of Ah Girl

Table 18: Recruitment Checklist for Ah Girl

	Pass	Failed
Physical Examination (Normal)	**Pass**	
Deworming status	**Up To Date**	
Vaccination status	**Up To Date**	
History of food allergy	**No, Pass**	
Lactating/ pregnant/ expected to be	**No, Pass**	
CBC (normal)	**Pass**	
Serum biochemistry (normal) Urinalysis (normal)	**Pass**	

Body weight	Pass	
BCS > 6/9	Pass	
Age at least 1 years old	Pass	
Indoor	Pass	
Isolated feeding area	Pass	

Cat Group Candidates

Candidate 1: Taro

Figure 11: Profile picture of Taro

Table 19: Recruitment Checklist for Taro

	Pass	Failed

Physical Examination (Normal)	**Pass**	
Deworming status	**Up To Date**	
Vaccination status	**Up To Date**	
History of food allergy	**No, Pass**	
Lactating/ pregnant/ expected to be	**No, Pass**	
CBC (normal)	**Pass**	
Serum biochemistry (normal) Urinalysis (normal)	**Pass**	
Body weight	**Pass**	
BCS > 6/9	**Pass**	
Age at least 1 years old	**Pass**	
Indoor	**Pass**	
Isolated feeding area	**Pass**	

Candidate 2: Shiro

Figure 12: Profile picture of Shiro

Table 20: Recruitment Checklist for Shiro

	Pass	Failed
Physical Examination (Normal)	**Pass**	
Deworming status	**Up To Date**	
Vaccination status	**Up To Date**	
History of food allergy	**No, Pass**	
Lactating/ pregnant/ expected to be	**No, Pass**	
CBC (normal)	**Pass**	

Serum biochemistry (normal) Urinalysis (normal)	**Pass**	
Body weight	**Pass**	
BCS > 6/9	**Pass**	
Age at least 1 years old	**Pass**	
Indoor	**Pass**	
Isolated feeding area	**Pass**	

Candidate 3: Mochi

Figure 13: Profile picture of Mochi

Table 21: Recruitment Checklist for Mochi

	Pass	Failed
Physical Examination (Normal)	**Pass**	
Deworming status	**Up To Date**	
Vaccination status	**Up To Date**	
History of food allergy	**No, Pass**	
Lactating/ pregnant/ expected to be	**No, Pass**	
CBC (normal)	**Pass**	
Serum biochemistry (normal) Urinalysis (normal)	**Pass**	
Body weight	**Pass**	
BCS > 6/9	**Pass**	
Age at least 1 years old	**Pass**	
Indoor	**Pass**	
Isolated feeding area	**Pass**	

Candidate 4: Leo

Figure 14: Profile picture of Leo

Table 22: Recruitment Checklist for Leo

	Pass	Failed
Physical Examination (Normal)	**Pass**	
Deworming status	**Up To Date**	
Vaccination status	**Up To Date**	
History of food allergy	**No, Pass**	
Lactating/ pregnant/ expected to be	**No, Pass**	
CBC (normal)	**Pass**	

Serum biochemistry (normal) Urinalysis (normal)	**Pass**	
Body weight	**Pass**	
BCS > 6/9	**Pass**	
Age at least 1 years old	**Pass**	
Indoor	**Pass**	
Isolated feeding area	**Pass**	

Candidate 5: Matcha

Figure 15: Profile picture of Matcha

Table 23: Recruitment Checklist for Matcha

	Pass	Failed
Physical Examination (Normal)	**Pass**	
Deworming status	**Up To Date**	
Vaccination status	**Up To Date**	
History of food allergy	**No, Pass**	
Lactating/ pregnant/ expected to be	**No, Pass**	
CBC (normal)	**Pass**	
Serum biochemistry (normal) Urinalysis (normal)	**Pass**	
Body weight	**Pass**	
BCS > 6/9	**Pass**	
Age at least 1 years old	**Pass**	
Indoor	**Pass**	
Isolated feeding area	**Pass**	

Candidate 6: Baby

Figure 16: Profile picture of Baby

Table 24: Recruitment Checklist for Baby

	Pass	Failed
Physical Examination (Normal)	**Pass**	
Deworming status	**Up To Date**	
Vaccination status	**Up To Date**	
History of food allergy	**No, Pass**	
Lactating/ pregnant/ expected to be	**No, Pass**	
CBC (normal)	**Pass**	
Serum biochemistry (normal)	**Pass**	

Urinalysis (normal)		
Body weight	**Pass**	
BCS > 6/9	**Pass**	
Age at least 1 years old	**Pass**	
Indoor	**Pass**	
Isolated feeding area	**Pass**	