Technical Bulletin

Versity™
An Alternative Protein for Cats

Key Points

Alternative protein

Versity is a dried yeast, *Saccharomyces cerevisae*, specifically produced for the pet industry. It is an alternative, high-quality protein for cats with a balanced profile of essential amino acids and low in fat, calcium and magnesium.

Palatability benefit

Based on total food consumed in split-plate testing, cats prefer a diet with Versity two to one over a Control diet ($P < 0.05$). Versity was clearly preferred by 10 cats while one cat clearly preferred Control.

Digestibility response

A nutritionally complete and balanced diet with 10% Versity was equally digestible compared with Control, resulting in acceptable stool quality. Apparent digestibility of dry matter, protein, fat and energy ranged from 81% to 86% for both diets.

Urinary pH and specific gravity

All cats produced urine within normal physiological ranges for pH and specific gravity. Versity-fed cats generally produced more acidic urine than cats fed Control (6.40 vs. 6.53, respectively).

Applications

Versity is an alternative protein that permits more flexibility when formulating cat foods and treats by reducing reliance on animal protein and complementing plant protein. Versity is an ideal protein source for all cats.

Manufacturers of pet foods and treats

continually seek new, high-quality protein sources to replace or complement current animal and plant-based sources. Preferably, these ingredients are cost-effective and consumer-appealing. Versity is a dried yeast, *Saccharomyces cerevisae*, specifically produced for the pet food industry to meet the ever-expanding need for alternative protein sources. The yeast source has not been genetically modified.

Versity is nutrient-dense with potential advantages over current animal- and plant-based ingredients. It is high in protein (48% minimum) and has a balanced profile of essential amino acids while being low in crude fat (3%-6%), calcium and magnesium. It also contains vitamins, minerals and functional fibers to support animal health and wellness. Versity is an ideal ingredient for cat foods and treats because of its nutritional profile. It also has no negative effects on diet consumption or utilization.

Research

Palatability and digestibility studies assessed the feeding value of Versity in a nutritionally complete and balanced diet matrix fed to healthy, adult cats. A separate study also assessed the effect of Versity on urine pH and specific gravity. All studies were conducted at a USDA-licensed facility according to guidelines established by the Animal Welfare Act and approved by their Institutional Animal Care and Use Committee. Ingredient and nutrient composition of test diets are shown in **Table 1** and **Table 2**, respectively.

Demonstrated nutrition with no observed adverse effects on palatability or digestibility

Diet palatability was tested using 20 cats in a standard two-bowl preference test. Total diet consumption over the two-day test period was 1,778 g and 851 g for Versity and Control diets, respectively (**Figure 1A**). This 2:1 consumption ratio was higher ($P < 0.05$) for Versity because cats consumed more ($P < 0.05$) diet on day two (**Figure 1B**). They also consumed more Versity than Control on day one, but the difference was not statistically significant. Average intake ratios for Versity vs. Control were 0.69 vs. 0.31, respectively (**Figure 2**). An intake ratio ≥ 0.67 indicates a 2:1 consumption ratio and represents a strong preference for one diet over the other. In this study, Versity was clearly preferred by 10 cats based on intake ratios ≥ 0.67, while only one cat showed a clear preference for Control. First-choice preference was not statistically

Table 1. Ingredient composition of test diets

Ingredient, %	Control	Versity
Chicken meal	20.0	20.0
Brewers rice	12.0	12.0
Corn	12.0	12.0
Wheat grain	12.0	12.0
Corn gluten meal	10.0	10.0
Versity		10.0
Pork meal	9.2	1.3
Wheat midds	7.4	1.9
Poultry fat	9.5	10.2
Miscellaneous[1]	6.2	6.2
Macrominerals[2]	1.0	3.6
Vitamins & trace minerals[3]	0.7	0.8

[1]Beet pulp, palatant, flaxseed, calcium propionate, ethoxyquin

[2]Potassium chloride, salt, calcium carbonate, monocalcium phosphate

[3]Choline chloride, iron sulfate, zinc sulfate, vitamin E, zinc oxide, manganese sulfate, copper sulfate, selenium, niacin, biotin, calcium pantothenate, riboflavin, vitamin A, menadione sodium bisulfite complex, thiamine mononitrate, vitamin B12, calcium iodate, pyridoxine HCl, vitamin D3, cobalt carbonate, folic acid

Figure 1. Diet preference based on total food consumption combined over two days (A) or average daily food consumption (B). $^{a,b}P < 0.05$

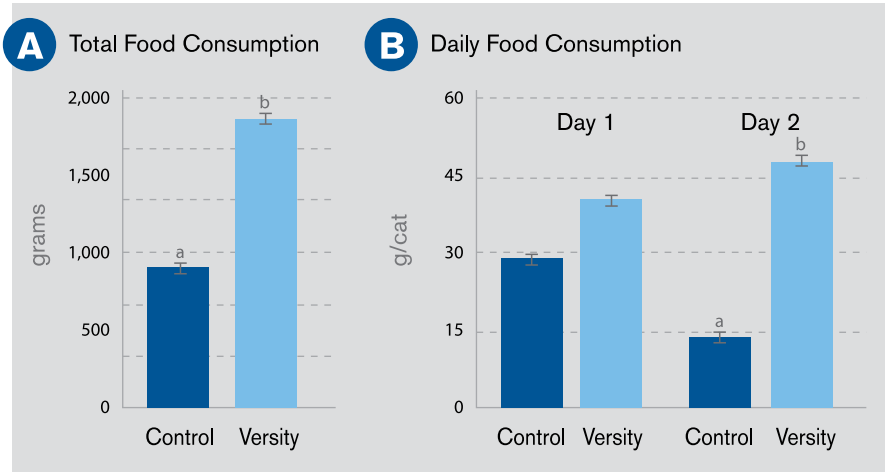


Table 2. Nutrient composition of test diets

Nutrient [a]	Control	Versity
Moisture, %	7.9	6.0
Crude protein, %	32.8	33.1
Crude fat, %	16.3	16.9
Crude fiber, %	2.1	1.6
Ash, %	8.2	8.2
Calcium, %	1.8	1.7
Phosphorus, %	1.2	1.1
Nitrogen-free extract, %	40.7	40.2
Gross energy, kcal/g	5.2	5.1
Metabolizable energy, kcal/g[b]	4.0	4.0

[a] Composition expressed on DM basis

[b] Atwater calculation: ME = 10 x {(3.5 x % Protein) + (8.5 x % Fat) + (3.5 x % NFE)}

different, but Versity showed a first-choice ratio of 1.5:1. Versity was selected first on 24 occasions while Control was selected first on 16 occasions. Individually, six cats chose Versity first on both days while two cats chose Control first, but this difference was not significant.

The AAFCO-defined quantitative collection method was used to measure total tract nutrient digestibility in

Ideal for cats: high in protein and essential amino acids, low in fat, calcium and magnesium

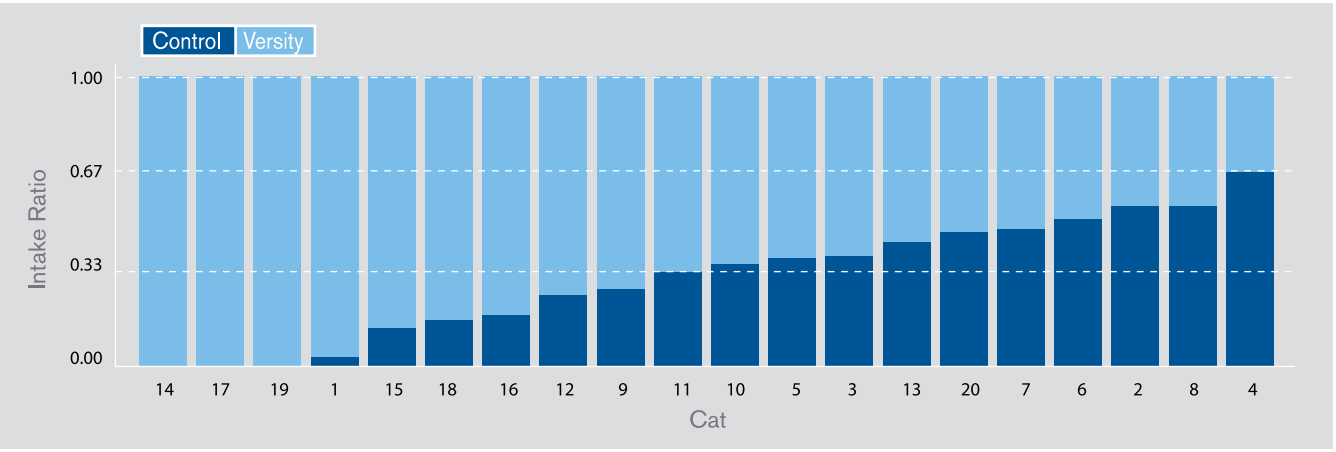
14 cats. Cats were fed their respective test diet once daily during five-day acclimation and collection periods. A fecal rating system was used to subjectively evaluate stool quality

(0 = none;
1 = watery diarrhea;
1.5 = diarrhea;
2 = moist, no form;
2.5 = moist, some form;
3 = moist, formed;
3.5 = well-formed, sticky;
4 = well-formed;
4.5 = hard, dry;
5 = hard, dry, crumbly).

Daily food consumption and total fecal output were similar for both diets. Cats fed Versity tended ($P < 0.10$) to have better stool quality compared with cats fed Control (3.13 ± 0.11 vs. 3.07 ± 0.08, respectively). Both diets were utilized equally with protein, fat and dry matter digestibility estimates ranging from 81% to 86% (**Figure 3**). The digestible energy content was not different between diets, averaging 86%. In contrast, metabolizable energy content of Versity (3.96 ± 0.11 kcal/g) was significantly ($P < 0.05$) higher than Control (3.80 ± 0.08 kcal/g) when calculated using modified Atwater values (**Figure 4**).

Urine pH and specific gravity were measured using standard clinical procedures. Twenty cats were

Figure 2: Individual intake ratios based on total consumption of Versity vs. Control



housed individually and fed test diets for seven days prior to urine collection. All cats produced urine within the normal physiological pH range (5.50 to 8.50) for healthy, adult cats (**Figure 5A**). There were no diet-related differences; however, cats fed Versity generally produced more acidic urine (6.40 ± 0.12) than Control (6.53 ± 0.15). Specific gravity was also within the normal physiological range (1.001 to 1.080) for all cats (**Figure 5B**). It did not differ by diet (1.055 ± 0.0033 vs. 1.039 ± 0.032, for Versity and Control diets, respectively).

Summary

Overall, these studies demonstrate Versity can be successfully fed to cats when incorporated into a nutritionally complete and balanced formula. It does not compromise diet palatability or nutrient digestibility. In fact, Versity can improve palatability as cats preferred the Versity-containing diet twice as much as the Control diet. Versity also helps to support digestive health as reflected by better stool quality.

Versity represents an excellent ingredient choice when seeking an alternative protein for cat foods and treats. It permits more formulation flexibility due to its well-balanced profile of essential amino acids and its low concentrations of fat, calcium and magnesium. Versity is neither animal- nor plant-based. It is a highly versatile protein which can be used to reduce reliance on expensive animal-based protein while simultaneously complementing the inferior quality of plant-based protein. Versity is demonstrated nutrition that supports the health and wellness of all cats. ■

Figure 3. Apparent total tract nutrient digestibility (%)

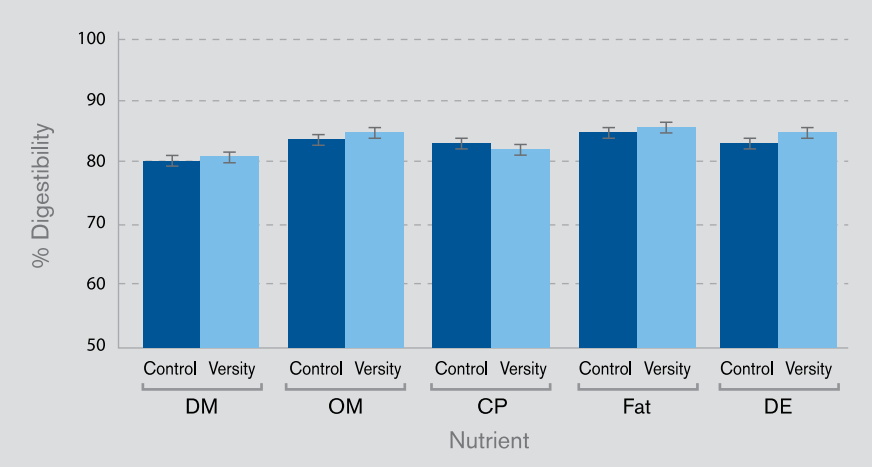


Figure 4. Metabolizable energy (kcal/g) content based on modified Atwater. $^{a,b}P<0.05$

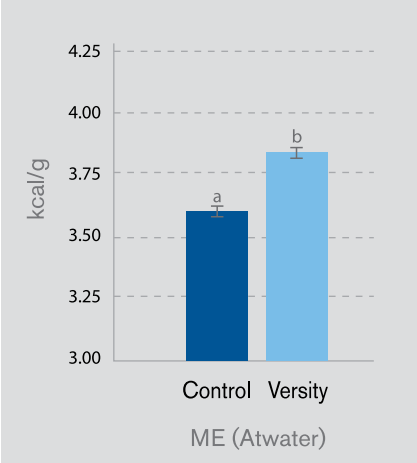
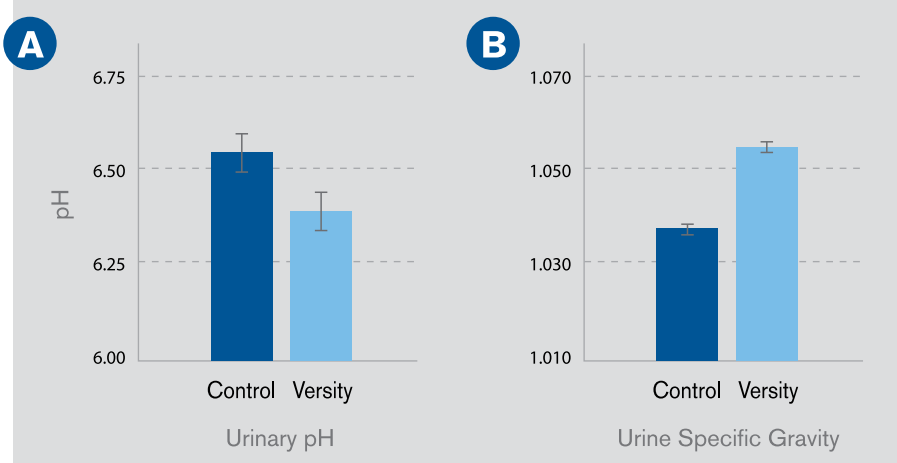


Figure 5. Urine pH (A) and specific gravity (B)



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