

Toronto Humane Society Protocol: Pet Food Donation After “Best Before Date”	
Approved by: Linda Jacobson, Sam Jones	Effective date: 4 May 2022
Author: Kyrsten Janke	Revision Date:
Purpose	Provide an evidence-based protocol for short-dated foods, to reduce food waste and increase the availability of food in the food bank.

Background

Best Before Date (BBD) (also called “Sell By” or “Use By” Date) is often erroneously thought to be a hard expiry date for food, resulting in a huge amount of unnecessary waste of both animal and human food.

Key points:

- Most pet foods can be fed for quite a long time beyond BBD
- The **quality** of the food gradually drops off over time, but not overnight!
- There is no **safety** concern for food beyond BBD **IF** the packaging is intact and appropriate.

See Appendix for more details about BBD.

Accepting and Dispensing Food Donations Past the BBD

Wet Food

1. **Accept and dispense canned food up to two years past BBD (1), if:**
 - a. The can is not damaged in a way that exposes the food to the environment (1).
 - i. Damage is not severe, such as dents near seams or that could introduce pin-holes AND
 - ii. No bulging indicating gas formation from bacterial activity
2. **Do not accept and dispense moist or wet uncanned pet food past BBD.** For example: Whiskas Perfect Portions or Cesar’s.

Dry Food

1. Accept and dispense **BOXED/BAGGED DRY** pet food and **DRY TREATS** up to six months past BBD^a, if:
 - a. **The packaging^b is not damaged in a way that exposes the food to the environment (1) (see Table).**

^a Boxed or bagged grains and cereals for human consumption can be retained for 6-12 months after the BBD according to Food Banks Canada (4). This food source is the most similar food bank item to pet food in terms of water activity (5). However, pet food is more vulnerable to chemical reactions causing spoilage than cereals or grains. Combination foods, vulnerable to these chemical reactions, may be retained for up to 6 months after the BBD (4).

^b Packaging types are not considered in this protocol given the lack of information regarding packaging for human food acceptance by charities. Appropriate packaging is determined by the manufacturer. Foods with less preservatives may use more

- i. If the packaging is damaged in such a way that it is exposed to the environment it should either be discarded or immediately re-packed in an airtight/waterproof container (for example, if damaged during transport).

Prescription Diets

For long-term use, prescription diets require veterinary advice – but they are not a drug and do not need a formal prescription. Toronto Humane Society food bank donations are, by their nature, short-term and potential long-term issues are therefore not a concern. Prescription foods are not detrimental for short term use, even in the wrong patient. Therefore, **all prescription diets are accepted and dispensed as for any other food, including specifications regarding BBD.**

If a client requests a **specific** prescription diet and it is available, it can be dispensed for an animal with a diagnosis (vet records are not required). Recommend, but do not require, that they source ongoing supplies from their veterinarian.

Dispensing Food Donations past the BBD

1. If repackaging, ensure item is repackaged in a container that can be sealed (ex. Ziploc baggies)
2. Apply an information label to original or repackaged containers indicating that the pet food is past the BBD:



TORONTO HUMANE SOCIETY FOODBANK DONATION PROGRAM

Toronto Humane Society Veterinary experts have researched the longevity of pet foods and their best before dates. The results are as follows;

- Most pet foods can be fed for quite a long time beyond BBD (Best Before Date)
- The quality of the food **gradually** drops off over time
- There is **no safety concern** for food beyond BBD **IF** the packaging is intact and appropriate

WET FOOD - Canned food can be dispensed up to TWO YEARS past BBD

DRY FOOD - Boxed/Bagged Dry/Dry Treats food can be dispensed up to SIX MONTHS past BBD

Visit www.torontohumanesociety.com or call 416-392-2273 Ext-0 for all programs, including Public Veterinary Services, Public Training Services, Pet Parent Support Network.

Storage of Pet Food at Toronto Humane Society

1. Pet food should be stored at < 27°C (9)
2. Store dry food in a low moisture area (< 50-55%)
3. The temperature in the garage, where the food is stored, is reported to be ~20°C with a humidity of ~23% in the winter months.

advanced packaging to preserve freshness, while foods with more preservatives may use less advanced packaging to preserve freshness and instead rely on the food additives.

APPENDIX. MORE ABOUT BBD, FOOD SAFETY AND FOOD QUALITY

Pet Food Donation Centers provide supplementary pet food to people without sufficient means to acquire it themselves. This is one of the many services THS provides to reduce the product of poverty and inequity. Individuals who visit pet food donation centers often use these centers as one of many techniques to deal with the financial stress of paying for pet food (7). Among pet food donation users, 38% report often running out of pet food and 55% report being frequently concerned about running out of pet food (7). Discarding food on its Best Before Date (BBD) contributes to food waste (8). However, while it is important to provide accessible food, the food provided must also be of reasonable quality and reliably food safe.

The Best Before Date (BBD) is not an indicator of food safety, but an indicator of food quality (1,8). If food is properly stored it should retain the displayed nutritional characteristics and its intended sensory quality (taste, smell, and texture) should not be negatively impacted (1,8). BBD is also called the “sell-by-date” or “use by” date (8). Human food past its BBD can be donated to charitable organizations; therefore, it is reasonable to accept pet food past its BBD (8). Pet foods are expected to have a long shelf life of over 12 months (6), therefore food nearing its BBD may have already experienced storage stress for over a year by the time of donation.

The BBDs on food are not regulated by the Government of Canada (1). Therefore, the dates placed are determined by the company. Companies usually choose BBDs that account for the conditions and duration of retail and consumer storage. **The BBD only applies to unopened foods;** once food packaging is opened or damaged the BBD is no longer reliable (1).

Pet Food Safety Risk Assessment

Water activity

Water activity describes on a scale from 0.0-1.0 the amount of free water in a product. This is an important measure since it can be used to understand the amount of water available for microbial growth. Dry dog food and treats are typically between 0.4-0.45 Aw (2). This is considered low, as it is less than 0.6 Aw, and therefore pathogenic bacterial growth is unlikely and the food is considered non-hazardous (2). However, 0.4-0.45 Aw can still support the growth of yeasts and molds (2). These organisms can cause spoilage and have a negative impact on food quality (2). Soft pet foods (0.6-0.85Aw) and canned wet food (≥ 0.85) are considered hazardous, in their ability to support pathogenic bacteria growth (2).

Exposure to moisture can increase the water activity of a food and increase the risk of pathogenic bacteria growth. Therefore, it is pivotal to store pet food in low moisture environments. Scudamore et al. (1997) found 10% of dry pet food contained low levels of ochratoxins (2). Mycotoxins have been associated with pet food since it forms on cereal grains like corn and wheat (2). Development of these toxins can be avoided by keeping the water activity of the stored food at its original level consistently (2).

1. Pet Food Water Activity Table

Item	Water activity
Canned pet food (2,3,5)	≥ 0.85
Soft moist pet food (2,3,5)	0.83 – 0.88
Imitation Bone Treat (3)	0.679
Imitation Bacon Treat (3)	0.669
Dry pet food (2,3)	0.40 - 0.50
Dry Cat Chow, Purina (5)	0.236

Chemical stability






Rancidity

Avoiding rancidity for more than 12 months is a challenge in the Pet food industry (6). The most likely reaction that impacts pet food quality (3). Dry pet food is particularly vulnerable to this reaction because kibble is often sprayed with a fat coating to preserve freshness and improve nutritive value, and which is a key compound in the reaction (3). Antioxidants are used to prevent this lipid oxidation process (6). Rancidity will produce an unpleasant odour and flavour, will often be rejected by pets, and can produce toxic compounds (6,3).

Maillard reaction

The Maillard reaction is used during pet food production to generate the characteristic taste, flavour and odour of pet food (10). This happens when amino acids react to simple sugars and cause a deeper brown colour to form (10). However, when this reaction continues it can produce some undesirable affects. Besides a visual change it is also implicated in the formation of off-flavour and can decrease the palatability of food (2).

TABLE. INSPECTION OF DONATED FOOD PACKAGING FOR DAMAGE

<p>1. Rips, tears, punctures, holes</p> <ul style="list-style-type: none">• leaking• imperfect seals• moldy or foreign objects inside• contents contaminated	
<p>2. Insect damage</p> <ul style="list-style-type: none">• bugs in seams of package• bore holes• movements or spots in products• insect skins (or chaff in bottom of container)	
<p>3. Rodent damage</p> <ul style="list-style-type: none">• droppings• urine stains (use black light to detect)• gnaw marks	
<p>4. Spill or stains from unknown contaminant</p> <ul style="list-style-type: none">• unknown contaminant• flood or fire damage	
<p>5. Label damage</p> <ul style="list-style-type: none">• label is missing• label is unreadable/illegible• ingredients are unknown• BBD, use by, or expiry date is unknown	

REFERENCES

1. B.C. CDC. (2019). *Providing nutritious and safe food: Guidelines for food distribution organizations with grocery or meal programs*. Accessed from <http://www.bccdc.ca/resource-gallery/Documents/Guidelines%20and%20Forms/Guidelines%20and%20Manuals/EH/FPS/Food/FDO%20Guidelines%20with%20Grocery%20or%20Meal%20Program.pdf>.
2. Timmons, R.A. (2007). *Water activity as a tool for predicting and controlling the stability of pet foods*. Accessed from <https://en.engormix.com/feed-machinery/articles/water-activity-controlling-stability-of-pet-foods-t33837.htm>.
3. Carter, B. (n.d.). *Application notes: Is water activity the most important pet food specification?* Accessed from <https://neutecgroup.com/resource-library/water-activity/white-papers/173-water-activity-in-pet-food>.
4. Food Bank Canada. (2013). *Guideline for distributing food past the best before date*. Accessed from <http://www.bccdc.ca/resource-gallery/Documents/Educational%20Materials/EH/FPS/Food/FoodBanksCanadaGuidelinesforFoodShelfLife2013.pdf>.

5. Schmidt, S.J. & Fontana, A.J. (2007). *Appendix E: Water activity values of select food ingredients and products*. Blackwell Publishing. Accessed from <https://onlinelibrary.wiley.com/doi/pdf/10.1002/9780470376454.app5>.
6. Chanadang, S., Koppel, K., Aldrich, G. (2016). The impact of rendered protein meal oxidation level on shelf-life, sensory characteristics, and acceptability of extruded pet food. *Animals*, 6(8), 44. <https://doi.org/10.3390/ani6080044>.
7. Arluke, A. (2021). Coping with pet food insecurity in low-income communities. *Anthrozoos*, 34(3), 339-358. <https://doi.org/10.1080/08927936.2021.1898215>.
8. USDA. (2019). *Food Product Dating*. Accessed from <https://www.fsis.usda.gov/food-safety/safe-food-handling-and-preparation/food-safety-basics/food-product-dating>.
9. FDA. (2019). *Tips for safe handling of pet food and treats*. Accessed from <https://www.fda.gov/animal-veterinary/animal-health-literacy/tips-safe-handling-pet-food-and-treats>.
10. Van Rooijen, C. et al., (2013). The Maillard reaction and pet food processing: effects on nutritive value and pet health. *Nutrition Research Reviews*, (26), 130-148. DOI: 10.1017/S0954422413000103.