

Insights on the Growing Market for Hemp-CBD Pet Products



FROM THE EDITOR



Laura Drotleff

(with Juni, and
Hiro on page 3)

Hemp Industry Daily

Americans love their pets and spare no expense to keep their fur babies happy and healthy. The data backs up this notion.

According to the American Pet Products Association, U.S. pet owners spent a recordbreaking \$72.6 billion on their pets in 2018, an increase of more than \$3 billion from 2017. And there was a \$3 billion increase in 2017 over 2016, when consumers also broke the record with \$66.8 billion in spending.

Pet owners are spending the money in a variety of ways, including food, supplies, over-the-counter (OTC) medications, veterinary care, live-animal purchases and other services. While standard products still account for the majority of the expenditures, the three largest categories were all areas in which manufacturers are investing in hemp-CBD formulations for dogs and cats:

- Pet food, including increased spending on premium and natural food.
- Veterinary care.
- Supplies and OTC medicines.

Pet owners in all demographics view their pets as irreplaceable family members, which is why there is continually “such incredible growth” in all aspects of the pet-care industry, according to APPA President and CEO Bob Vetere.

Considering that younger consumers represent the largest pet-owning demographic, that spending trend likely will continue. This group is willing to pay more for high-quality products and services to enhance their pets’ lives.

But CBD still isn’t technically legal for animal consumption under federal and state laws, because it remains unregulated by the U.S. Food and Drug Administration. By the FDA’s definition, CBD is not “generally recognized as safe” as an ingredient in human or animal food or dietary supplements, and the agency has continued to send warning letters to pet-food manufacturers that have made unsubstantiated medical claims about their products.

Yet, CBD companies continue to roll out products formulated for animals—particularly for small animals kept as pets such as cats and dogs. Retailers ranging from small, independent pet stores to mass-market giants carry these items because customers want them. And while veterinarians are strictly prohibited from prescribing hemp-CBD products to their patients, they also recognize the potential value of hemp-CBD for pets.

The market for pet CBD is booming, jumping from almost zero in 2016 to roughly \$25 million last year—and it might grow to \$60 million in 2020, according to market analytics giant Nielsen Global Connect. Assuming the FDA approves this use within the next year and more mainstream retailers and veterinarians embrace the category, hemp-CBD products could represent one in four animal health supplements by 2025, Nielsen predicts.



To help you navigate the growing hemp-CBD pet products market, *Hemp Industry Daily* is pleased to present “Sector Snapshot: Insights on the Growing Market for Pet CBD Products,” in collaboration with Nielsen Global Connect. This is part of an ongoing partnership that aims to provide valuable consumer data and research for the hemp and CBD industry.

Illustrated with photos of pets in the *Hemp Industry Daily* and *Marijuana Business Daily* staff family, this report provides data and insights into:

- Estimated sales of hemp-CBD pet products.
- Demographics for purchasers of the products.
- Federal regulatory outlook for the category.
- Market penetration.
- Pet ailments likely to be treated with hemp-CBD products.
- Decision drivers and barriers for customers.
- Price of conventional pet products compared with hemp-CBD offerings.
- Retail trends.
- Top brands investing in hemp-CBD pet products.

We hope you will use this data and information as a guide for navigating the growing market for hemp-CBD products.

Please email me with questions or comments at laura.drotleff@hempindustrydaily.com.

Laura Drotleff
Hemp Industry Daily



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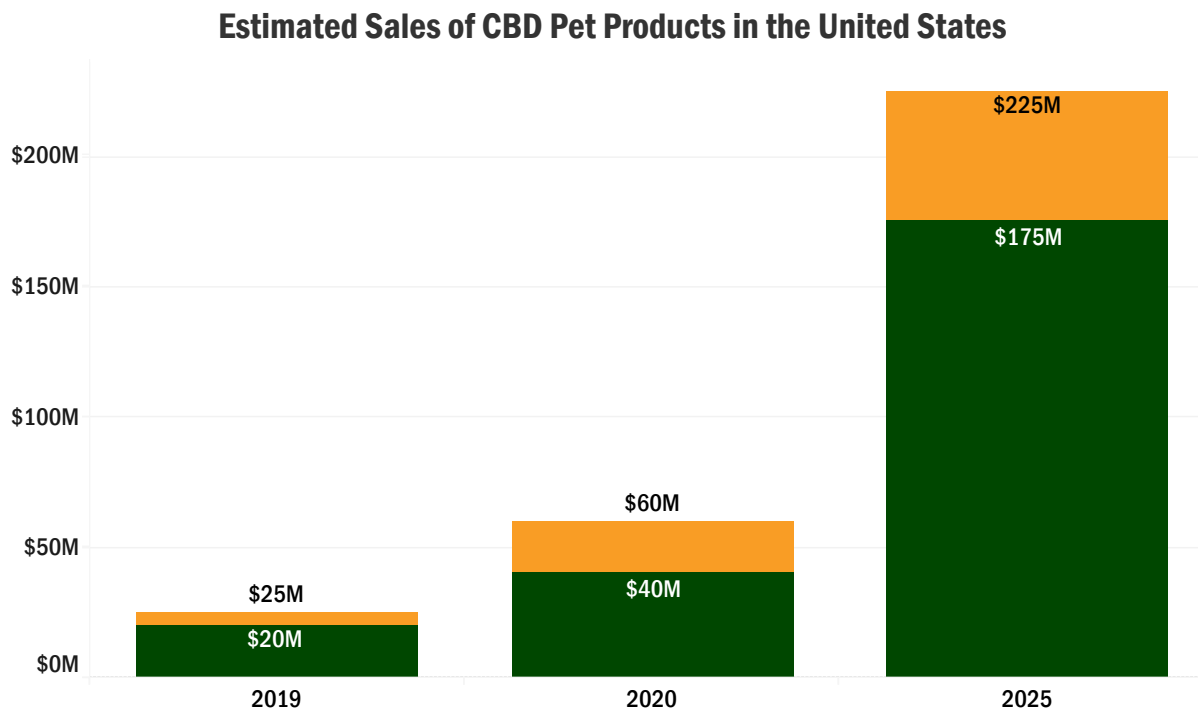


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Chart 1: Estimated Sales of CBD Pet Products in the United States

Source: The Nielsen Co.

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Pet owners are notorious for spending a lot of money on their pets. No expense is spared when it comes to keeping fur babies happy—and that same attitude extends to hemp and CBD products for pet health and wellness.

In 2019, U.S. sales of hemp-derived CBD products formulated for pets reached \$20 million-\$25 million; in 2020, sales are expected to soar to \$40 million-\$60 million, representing some of the largest growth seen to date in hemp-CBD categories.

Comparatively, total sales of all hemp-derived CBD consumer products in the U.S. were roughly \$1.2 billion for 2019, and Nielsen projects total U.S. sales of hemp-derived CBD consumer products for 2020 will reach \$1.7 billion-\$2 billion. The average of that range, \$1.85 billion, represents a 54% year-over-year increase.

By 2025, Nielsen Global Connect, a division of Nielsen that focuses on data for manufacturers and retailers, estimates that hemp-derived CBD products formulated for pets will generate \$175 million-\$225 million in annual sales across all channels, roughly 3% of the expected \$6 billion-\$7 billion hemp-derived CBD consumer products category.



This forecast is based on several assumptions, including:

- Favorable U.S. Food and Drug Administration guidance and/or legislation from Congress approving CBD in ingestible products in early 2021. Such a move would support widespread distribution of CBD pet products in traditional brick-and-mortar retail.
- No major adverse clinical studies relative to the efficacy and safety of hemp-CBD products for pets.
- Retailers and consumer packaged goods manufacturers reacting to hemp-CBD product development and distribution in a manner at least comparable to other functional ingredient introductions.
- Prices for hemp-CBD pet products remaining roughly 1.5-2 times the cost of comparable CPG pet products. Hemp-CBD pet product prices currently are roughly 370% higher than traditional pet products.

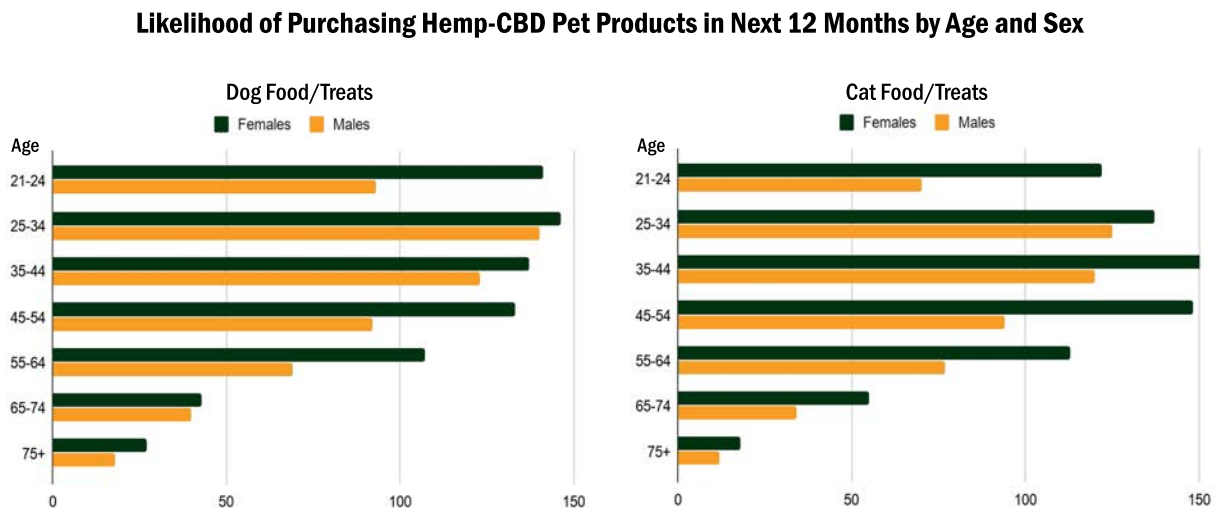
A national survey by the American Pet Products Association (APPA) shows that spending on pet products continues to break records year-over-year and that trend is not slowing down. The APPA found that Americans spent a record-breaking \$72.6 billion on their pets in 2018. That was an increase of more than \$3 billion over 2017 and \$6 billion from 2016—both record-breaking years in their own right. The 2018 figure includes money spent on food, supplies, over-the-counter medications, veterinary care, live-animal purchases and other services.

Likewise, the market for hemp-CBD pet products is booming, going from almost zero in 2016 to \$25 million in 2019. The areas where consumer spent the most in 2018, according to APPA, were:

- Pet food.
- Veterinary care and supplies.
- Over-the-counter medicine.

Hemp-derived CBD products for pets remain controversial because, like CBD products for humans, they remain unregulated and therefore technically illegal for veterinarians to prescribe. Lack of regulation and efficacy are key barriers for consumers not already buying hemp-CBD pet products.



Chart 2: Likelihood of Purchasing Hemp-CBD Pet Products in Next 12 Months by Age and Sex

Source: Nielsen "Thinking Beyond the Buzz" CBD Study (U.S.) 2019
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Women are more likely to purchase hemp-derived CBD pet products than men, according to data provided by Nielsen. And if the women are younger than 35, the likelihood increases.

Even so, current use of these types of products across demographic groups is low—but not because pet owners aren't interested. It might be that they just haven't had the opportunity to try the products yet. (See our analysis of barriers later in this report.)

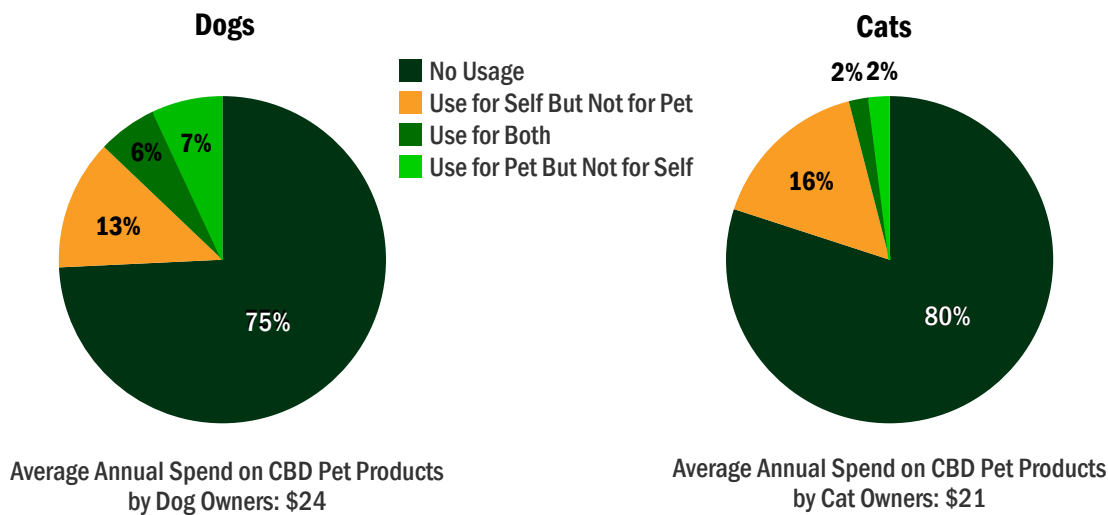
Geography also matters when it comes to identifying who is buying CBD products for their pets and what they're buying, with consumers in the West (Pacific and Mountain regions) and New England reporting higher purchase rates when it comes to dog treats or chews than any other area. Pet owners on the East Coast and in the South direct their CBD purchases at supplements, on the other hand.

On the household-income spectrum, consumers on the lower end of the socioeconomic scale are more likely to have purchased a pet-formulated hemp-CBD product even though they tend to be significantly more expensive than traditional products. While the research did not identify a specific reason for this, it revealed that "Young Transitionals," consumers at the beginning of their careers, are the consumer group most likely to have purchased hemp-CBD products for their pets. This cohort might have different spending priorities than older segments.

Among cat owners specifically, Nielsen noted that "Young Transitionals" along with "Start Up" families with young children and "Small Scale" families with one child or divorced families living in two- or three-person households are more likely to purchase hemp-CBD pet products. These groups might be more likely to own lower-maintenance cats than dogs if they live in apartments or small homes without a yard.

Within the next year, female buyers of CBD pet products are 57% more likely to buy CBD dog food and treats than their male counterparts and 59% more likely to buy CBD cat food and treats.

New buyers of pet CBD products also will skew younger over the next year, Nielsen predicts, with the 25-34-year-old and 35-44 cohorts expected to buy the most products for both cats and dogs.

Chart 3: CBD Use by Pet Owners

Source: Nielsen "Thinking Beyond the Buzz" CBD Study (U.S.) 2019

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The market for CBD pet products is still in its infancy. Among pet owners, 75% of dog people and 80% of cat people do not use hemp-CBD or give it to their pets. Another 13% of dog owners and 16% of cat owners use hemp-CBD products for themselves but don't give it to their pets.

Yet, spending on the health and wellness of pets is on the rise, meaning that manufacturers and sellers of pet CBD products have significant potential for growth—if they can figure out how to effectively tap into the market.

There is currently greater use of hemp-CBD products for dogs than cats, with 13% of dog owners saying they give it to their dogs regardless of whether they use it themselves. Only 4% of cat owners say the same.



On average, dog and cat owners annually spend \$24 and \$21, respectively, on hemp-CBD products for their pets. In both cases, purchase frequency is low primarily because many pet owners buy once and hold on to the item for some time or, in some cases, do not come back to the category, Nielsen notes. A key to increasing this would be creating repeat buyers for the products and/or increasing adoption of more frequent use.

REGULATING PET CBD

The U.S. Food and Drug Administration doesn't oversee products just for people. Rather, the agency's charter gives it jurisdiction over products intended "for man or other animals," meaning it also runs the show for oversight of products to feed or treat companion animals.

Just as in the human market, though, the FDA's enforcement of prohibited ingredients in the pet supply chain is very much risk-based. In other words, the agency devotes its limited resources to those products considered most likely to endanger human or animal health—and CBD has yet to be linked to serious disease in either.

(CBD manufacturers should be aware, however, that THC can be fatal in nonhumans. While no recorded human deaths have been attributed to THC exposure, dogs and cats have died from what veterinarians call "cannabis toxicity.")

The FDA does not consider CBD in any amount, or from any source, to be legal in animal feed or medicine—and it reminded the nation's veterinarians of this in the summer of 2020. "We are concerned that some people wrongly think that the myriad of CBD products on the market have been evaluated by us and determined to be safe, or simply that using CBD can't hurt," FDA senior counsel Randall Gnatt told the American Veterinary Medical Association (AVMA).

FDA ISSUED NUMEROUS WARNING LETTERS FROM 2015 TO PRESENT

Unapproved new animal drugs	Sections 301(a) and 501(a)(5)
Adulterated food	Sections 301(a) and 402(a)(2)(c)(i)
Illegally marketed food	Section 301(l)
Misbranded drugs	Sections 301(a) and 502(f)(1)
Unapproved new drugs	Sections 201(p), 301(d) and 505(a)
Illegally marketed dietary supplements	Section 201(ff)(3)(B)

Of the warning letters sent to CBD manufacturers in 2019, 13 of 15 went to companies making CBD products for pets.

Although the FDA says it is intrigued by the therapeutic potential for CBD in animals, more research needs to be done to ensure CBD is safe for animals. The FDA told the AVMA that it is especially interested in seeing studies including:

- Safety data for nonprescription CBD.
- Data on a wide variety of products with variable product standardization and characterization.
- Cumulative exposure and appropriateness of safe threshold levels.
- Use by special populations.
- Animal species-specific data.
- Safety of human food derived from animals that consume CBD.

FDA Cannabis Work Plan

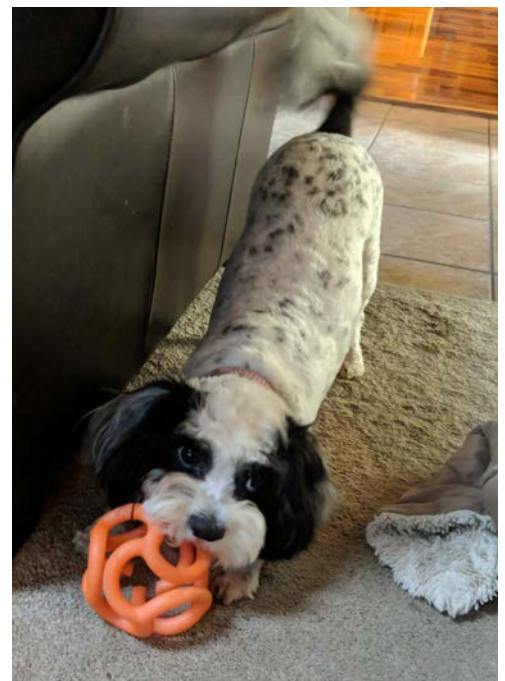
Coordinate a **scientific review focusing on CBD safety**, including information received during the public hearing and through the public docket.

Evaluate **policy options for a regulatory path forward for non-drug products that will be informed by** the results of scientific review.

Continue to **send warning letters/consider enforcement action** as needed to protect public health (e.g. making serious unapproved drug claims).

Continue to **engage and communicate** with federal and state regulators, as well as other stakeholders.

The FDA said it is open to a “regulatory path forward for non-drug products” containing CBD and laid out a “cannabis work plan” to achieve that for both human and pet products. Unfortunately, the proposal does not indicate a time frame for how long this work plan might take to execute.



DECISION DRIVERS

TOP FIVE REASONS PET OWNERS BUY SPECIFIC PET CBD PRODUCTS

Amount of CBD	60%
Quality of hemp used	53%
No pesticides or herbicides used	52%
Amount of THC	43%
U.S.-grown hemp	40%

LEAST IMPORTANT DRIVERS BEHIND CBD PET PRODUCT PURCHASES

Contains cannabis-derived compounds other than CBD or THC
Brand
Packaging appeal



Pet parents typically are as picky about the products they choose for their fur babies as they are about the products they choose for the humans in their families. That same level of caution also applies to hemp-CBD.

Among all hemp-CBD users in the U.S., the top decision driver for determining which product to use is the amount of CBD in the product. That's followed by certification that the hemp used was not grown with pesticides or herbicides, where the plant was grown and the quality of the product inputs.

Hemp-CBD users are also concerned with the amount of THC in their products. Dog owners are more likely to be influenced by this than the general consumer, but cat owners who give their pets hemp-CBD vitamins and supplements are significantly more worried about THC percentages in their products than are dog owners. Yet, cat owners are also 25% less likely than dog owners and general consumers to buy a hemp-CBD product containing zero THC.

Meanwhile, hemp-CBD customers are generally less concerned about whether their products are certified organic, produced from nongenetically modified hemp or grown sustainably, with only a quarter of those surveyed highlighting each of these aspects as important. Pet owners, on the other hand, are significantly more concerned about these topics. Dog owners are up to 35% more likely and cat owners are up to 69% more likely to purchase food, treats, vitamins and supplements if they are certified organic, verified non-GMO and produced sustainably.

Few hemp-CBD consumers indicated that they based their purchasing decisions on the extraction process used, whether products contained other cannabis-derived compounds aside from CBD or THC, product brand or packaging appeal.





However, among the small group of dog and cat owners who say these factors are meaningful in purchase selection, they were extremely important. For example, cat owners who said the overall cannabinoid profile was crucial were 178% more likely to consider buying products containing other cannabinoids.

Conversely, consumers who said they are not likely to consume hemp-CBD in the next year indicated that product efficacy and a lack of regulation and oversight by the U.S. Food and Drug Administration are key reasons (64%) for their mindset. More than 60% of consumers worried they wouldn't like the effects of hemp-

CBD because it would cause physical or mental harm or would be habit-forming. More than half of U.S. adults said hemp-CBD products are too expensive.

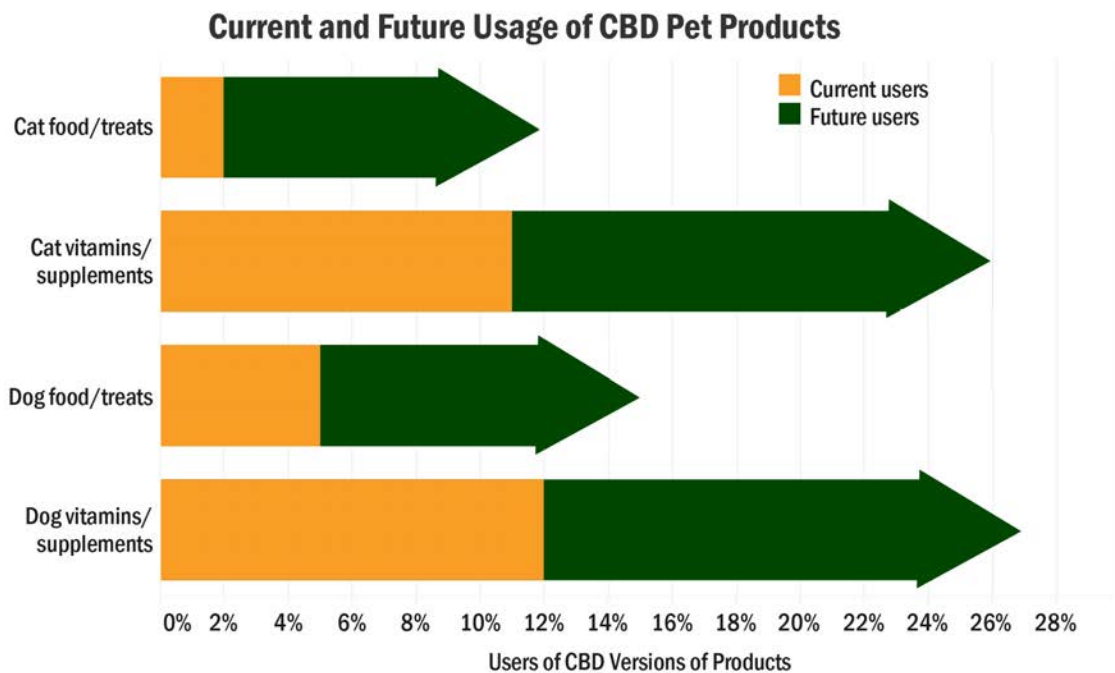
About 20% of consumers said they prefer THC-dominant products instead of CBD, or CBD derived from marijuana instead of hemp. Others said they felt overwhelmed (36%) by all the options and choices available on the market, so they just didn't buy them at all.

Lack of convenience in obtaining CBD and moral opposition also were listed as barriers to participation in this market.

TOP 10 BARRIERS TO CONSUMING HEMP-CBD PRODUCTS

- Too hard to gauge effectiveness of products: 64%
- Little to no scientific research showing efficacy or benefits: 64%
- Wouldn't like the effects: 62%
- Types of products haven't been approved by the FDA: 61%
- Little government oversight or regulations: 61%
- Afraid hemp-CBD might cause physical harm: 61%
- No way to ensure the product contains any CBD: 61%
- Afraid hemp-CBD might cause mental harm: 60%
- Too expensive: 56%
- Afraid it might be habit-forming: 55%



Chart 4: Current and Future Usage of CBD Pet Products

Source: Nielsen "Thinking Beyond the Buzz" CBD Study (US & CAN) 2019

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Hemp-CBD products have the opportunity and momentum to vastly impact the pet products market. Two-thirds of American households currently have pets, and hemp-CBD consumers are 10% more likely to have a pet than non-CBD consumers.

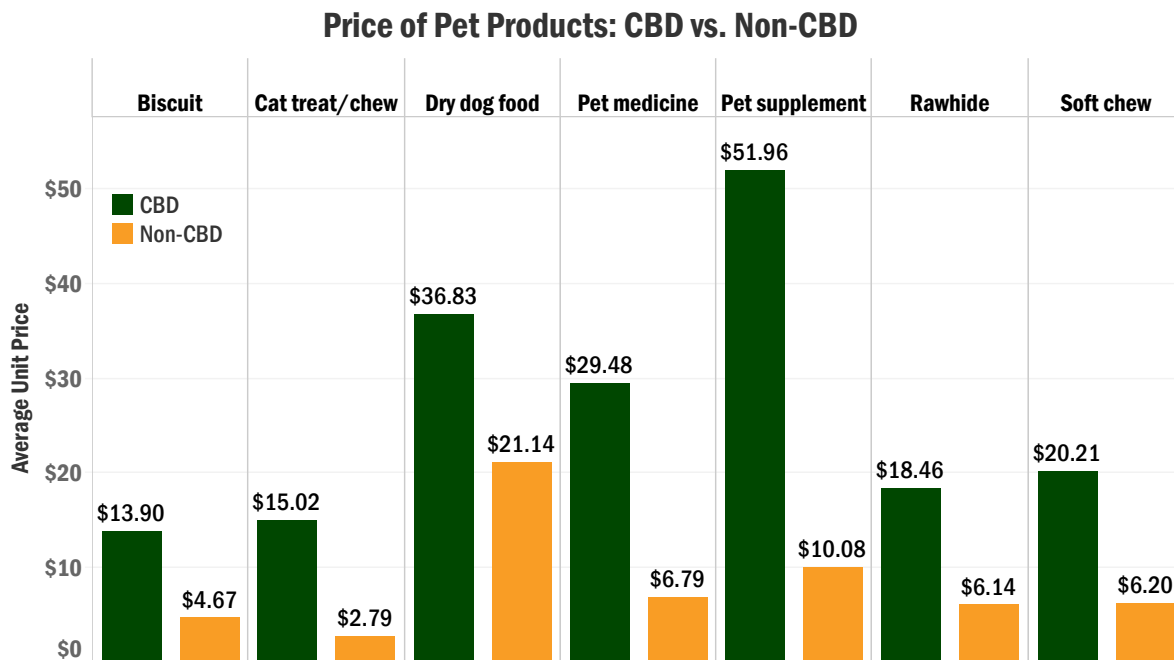
Nielsen projects that by 2025, hemp-CBD dog food and treats will increase by threefold among current users of non-CBD products and nearly that much among all dog owners. Dog vitamins and supplements with hemp-derived CBD are on track to more than double among dog owners and current users of traditional consumer packaged goods, non-CBD products.

Cat food and treats infused with hemp-CBD are on track to increase more than sixfold among cat owners and consumers buying consumer packaged goods pet products, while cat owners and buyers of traditional cat products stand to triple their purchases of hemp-CBD vitamins and supplements formulated for cats.

Nielsen notes that more than 1 in 4 pet supplement consumers could be using a hemp-derived CBD pet supplement. Because of these numbers, Nielsen forecasts that by 2025, hemp-derived CBD products formulated for pets will generate \$175 million-\$225 million in annual sales across all channels, signifying a threefold increase in five years.



Chart 5: Price of Pet Products: CBD vs. Non-CBD



Source: Nielsen Answers on Demand, all outlets combined+pet+conv average unit price. Latest 52 weeks based on April 25, 2020.
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Hemp-derived CBD remains costly, because the hemp industry supply chain is still in its infancy and the kinks are far from being worked out. Hemp crops are expensive to produce and process because of high-dollar and as-yet-unstable genetics, labor-intensive and complex crop production as well as a processor shortage. Add the cost involved stemming from the manufacturing, packaging and food-safety standards that many CBD makers are implementing, and the price of CBD pet-product manufacturing is hefty as well.

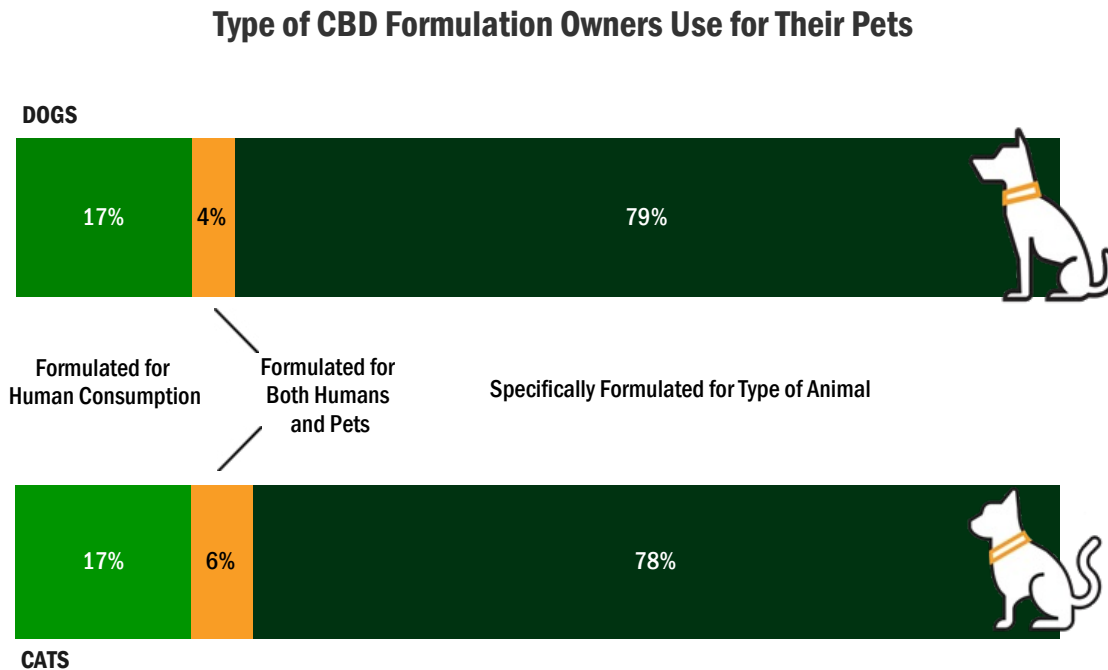
So it's not surprising that CBD pet products are priced higher at retail than comparable, standard non-CBD products. Some CBD products are priced exponentially higher than their mainstream cohorts. Take the categories with the highest price differences between standard and CBD versions, and you see:

- Supplements clock in at six times higher than non-CBD products.
- Dry dog food with CBD is 74% more expensive.
- Medicine is three times more costly if it has CBD in it.

According to data from all Nielsen-tracked census channels, including food, drug and convenience stores, the average unit price for hemp-CBD pet products is \$15.61. There are currently more pet treats on the market than any other category (46%), with tinctures (30%) and powders (10%) following behind.

While Nielsen does not currently have measurable information on profit margins for comparable products, given the wholesale price of CBD extract versus the retail end-user price, it is likely that CBD product manufacturers are making higher margins than their non-infused counterparts, with obvious variances based on the product and brand. However, because of costs throughout the supply chain, it's possible that hemp-CBD pet-product manufacturers' profit margins aren't as high as many might expect when looking at these price differences.

Chart 6: Type of CBD Formulation Owners Use for Their Pets



Source: Nielsen "Thinking Beyond the Buzz" CBD Study (U.S.) 2019
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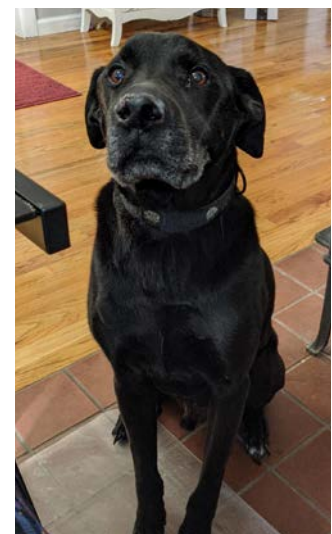
CBD manufacturers have wondered whether it's worth the investment to formulate hemp-derived CBD products specifically for pets or if humans ingesting CBD will simply give their furry friends a dose of the same products they take.

According to Nielsen data, the answer is clear: Pet owners are far more likely to choose products formulated specifically for their animals.

In fact, only 17% of dog and cat owners currently give their pets products formulated for human consumption. Another 4% of dog owners and 6% of cat owners give their pets hemp-CBD products made for both humans and animals. The overwhelming majority—79% of dog owners and 78% of cat owners—opt for animal-specific formulations of hemp-CBD products.

Meanwhile, 12.7% of dog owners and only 4.2% of cat owners say they have given any hemp-CBD products to their pets.

The percentage of CBD pet-product purchasers likely will continue to grow with additional scientific research on the effects of hemp-CBD for pets and proven product efficacy as well as regulatory clarity from the U.S. Food and Drug Administration. The latter could allow veterinarians and other pet-care professionals to recommend specific products for pets.



PET CBD PRODUCT TRENDS AT RETAIL

Mainstream retailers hopped on the CBD bandwagon after the 2018 Farm Bill made hemp a legal crop and took all the plant's parts and derivatives off the Controlled Substances list. Since then, hemp-CBD products formulated for humans have flooded retail shelves and online stores, causing steep competition among CBD manufacturers.

Pet stores—both independent and large chains—also picked up the category, stocking hemp-CBD pet food, treats, supplements and vitamins formulated for dogs and cats.

Sales of pet CBD products in 2016 stood at \$58,581, but that figure increased to nearly \$25 million in 2019, according to Nielsen Global Connect. Over the past year, 57% of pet specialty stores sold CBD products, up from 45% in the previous year.

The growth comes even as the U.S. Food and Drug Administration, which oversees pet foods and drugs as well as those for human consumption, has yet to authorize CBD for animals.

The FDA's Center for Veterinary Medicine regulates animal feed ingredients, and all potential ingredients are subject to a formal scientific review by the agency. Hemp and CBD have not yet been reviewed or approved as ingredients for animal food or supplements.



MAINSTREAMING CBD PET PRODUCTS

Two of the largest pet store chains—Petco and PetSmart—have entered the space, despite a lack of regulatory clarity for hemp-CBD products for pets.

Petco was the first major mainstream retailer to begin carrying hemp-CBD pet products, and the store now offers a number of brands with naturally occurring CBD for dogs and cats.



“We began selling CBD products in select stores as a result of consumer demand,” a Petco spokeswoman told *Hemp Industry Daily*. “.... As pet parents continue to seek out new ways to care for the overall health and wellness of their pets, the demand for trusted products with naturally occurring CBD for pets has also continued to grow.”

Petco selects brands based on high quality standards, the spokeswoman said.

In May, PetSmart started selling its first hemp-CBD brand in Colorado, Oregon, Indiana, Kentucky and Tennessee, with plans to expand to stores in other states in the coming months.

“We evaluated numerous CBD pet brands and selected Mary’s Tails to be the first CBD brand to be on shelf,” Tim Milano, vice president of merchandising for PetSmart, said in a statement. “The addition of Mary’s Tails will answer the call from our consumers seeking options for a highly trusted hemp extract with naturally occurring CBD for pets.”

But PetSmart came under fire in June when two federal lawsuits accused the company of false and deceptive practices for selling hemp products for pets that are unapproved by the FDA.

The lawsuits, filed in a federal court in Broward County, Florida, on behalf of two individual customers, claimed the customers bought products that were marketed as intended to treat, mitigate or prevent disease as well as provide calming, stress and anxiety relief for dogs.

The lawsuits went on to say that because the FDA hasn't approved the products, they are considered unsafe "and cannot lawfully be sold." The plaintiffs voluntarily dropped their lawsuits shortly after filing, "without prejudice," meaning they could be filed at another time. No reason was provided for why the lawsuits were withdrawn.



RETAIL EXPANSION AND DIFFERENTIATION

As hemp-CBD products become more widely available in mainstream retailers, it's likely more consumers will embrace them, considering that many consumers said a top barrier to purchasing hemp-CBD products was access, according to Nielsen. Among consumers who said they are not likely to consume hemp-CBD in the next year:

- 35% said hemp-CBD products were inconvenient to obtain.
- 26% said the product formulations they would like are not available.
- 25% indicated that stores that carried the products were too far away.

However, independent chains and pet stores have been on the forefront of hemp-CBD product trends and have an eye for smaller brands. According to Nielsen, mainstream pet stores will most likely try to carry the greatest assortment of products and formats, while independent or neighborhood stores will opt for differentiated products, including regional brands, that might not be available in major pet retailers. Meanwhile, vet clinic retail areas might focus specifically on medically formulated products and supplements.

DIRECT TO CONSUMER

The industry is seeing an increased number of manufacturers leveraging subscription-based models for price discounts per unit in the direct-to-consumer channel. The rationale for this approach appears to be cultivating brand loyalty, thereby minimizing the likelihood that consumers will shift to try different brands when their orders need to be replenished.

Human and pet product bundling is another strategy that direct-to-consumer hemp-CBD brands are trying. CBD consumers are more likely to give pet-specific hemp-CBD products to their animals if they are also using human products, so manufacturers want to cultivate brand loyalty among this population by expanding to this area.

PURSuing PRODUCT CERTIFICATION

With the increase in brick-and-mortar and online retail distributed products resulting in more competition, there has been an increase in brands that have received or are in the process of earning certification from trusted animal-welfare groups or organizations to help differentiate their products.

For example, the National Animal Supplement Council (NASC) aims to improve and standardize the animal-supplement industry by awarding its quality seal to companies that meet rigorous standards. The seal has become a trusted label that is sought out by both retailers and consumers.

According to the NASC, today's animal supplement industry is worth \$2 billion.

Because hemp-CBD products are currently unregulated, more manufacturers are also pursuing the U.S. Department of Agriculture Certified Organic label to promote their products as safe goods that are sustainably grown and produced. CBD brand owners see this as way to quell consumer fears about how the raw materials for their products are produced while also providing a familiar and trusted verification of quality. Like the NASC standards, the USDA Certified Organic program requires rigorous testing, site visits, paperwork and fees; in exchange, product manufacturers can market their products under the Certified Organic label.



Chart 7: Key Players in the Hemp-CBD Pet Products Sector**Chews Rank as Top Sellers for CBD Pet Products**

Source: Nielsen Answers on Demand, all outlets combined+pet+conv average. Selling price from week of May 4, 2018, through week of April 5, 2020.
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Companies in the hemp and CBD space are investing deeply in products formulated specifically for pets, as they see growing interest in the products among consumers. This increased demand also means mainstream pet stores have started to carry hemp-CBD formulations along with traditional pet products.

Most hemp-CBD brands started pet lines to complement their human products. It is a natural fit. According to Nielsen data, human consumers who use CBD are 10% more likely to have pets in their household.

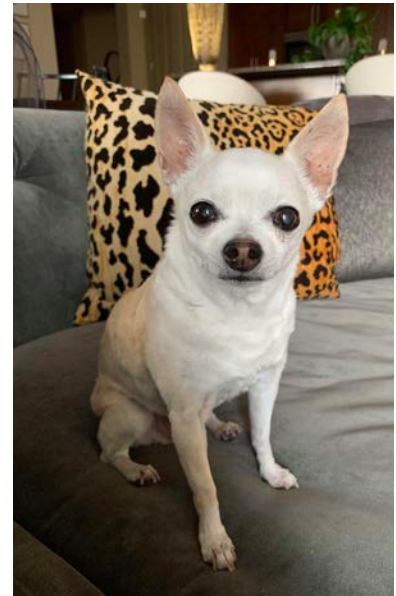
According to top-selling product data from Nielsen, leading hemp-CBD pet-products manufacturers include the following companies:

Pet Releaf

Hemp-derived CBD animal health brand Pet Releaf is manufactured by Littleton, Colorado-based Altmeds, which is owned in part (25%) by Elixinol, a producer in the state of hemp-derived CBD extract. Elixinol supplies extract from a U.S. Department of Agriculture-certified organic hemp strain, grown exclusively for Pet Releaf, according to the company. Pet Releaf products, which include hemp oils, capsules, treats, chews, bars and topicals for dogs and oils for cats, currently are sold by national pet chain Petco and more than 4,000 independent pet stores in the United States and abroad.

Treatibles

California-based Treatibles, using hemp grown from its Nashville, Tennessee, farm, provides organic, full-spectrum hemp oil and CBD products for the pet industry. Its products, formulated for dogs, cats and horses, include oils, capsules, treats, chews and topicals, which are sold in the company's online store and in independent, regional and national chain pet food and supply stores, feed stores, groomers and veterinary in-clinic stores nationwide. In July, Treatibles expanded distribution through online sales to customers in Japan after extensive clinical trials and research in collaboration with universities and veterinarians. The company has plans to expand to more than 1,000 stores in Japan through its partnership with natural pet products manufacturer Takakura New Industries.



Charlotte's Web

One of the longest-standing brands in the industry, Colorado-based Charlotte's Web produces hemp-CBD products, including extracts, chews and balms formulated specifically for dogs. The company's recent acquisition of Rhode Island-based Abacus Health Products added a portfolio of topical products and expanded its reach to more than 21,000 unique retail locations, including 700-plus pet stores. Charlotte's Web pet products is offered by chain retailer Petco and independent pet stores nationwide and are sold on the company's website. Charlotte's Web is a certified member of the National Animal Supplement Council.



Mary's Tails

In May 2020, Denver-based Mary's Tails became the first hemp-CBD brand picked up by PetSmart, the nation's largest pet store chain. The company, a division of Mary's Brands, sells hemp flower extract products in 122 stores in Colorado, Kentucky, Indiana, Oregon and Tennessee and had plans to expand into additional stores in the summer. According to Luke Mullins, vice president of sales, the company's products are in 1,000 retailers nationally, with plans to double that number by year's end.

Medterra CBD

The California-based company's line of pet products includes chews and tinctures for dogs and cats that are sold online and in pet retailers, including national pet chain Pet Supplies Plus and independent retailers. In 2019, the company became an official approved manufacturer of the NASC and partnered with Chuck Latham Associates, which allows Medterra's pet products to be distributed through Latham's network of retailers, manufacturers and distributors in the pet specialty, veterinary and farm stores industries. Medterra CBD, which sources its hemp from Kentucky, is collaborating with a team of Baylor College of Medicine researchers to assess the potential therapeutic effects of CBD for arthritic pain in dogs.

Innovet Pet Products

The Gardena, California-based Innovet pet products brand features hemp-CBD chews, tinctures, oils, calming pastes, pellets, CBD peanut butter and vitamins for dogs, cats, horses and other animals. The products are made from hemp sourced from partner farms in Oregon. Innovet was founded by college friends who were inspired by their own pets and their unique needs, and the executive team features a number of veterinarians. The company's website features a hemp blog, learning resources, first-aid guide, CBD dosage calculator and certificates of analysis for all products.

Cannanine

California-based Cannanine produces organic, full-spectrum, THC-free hemp-CBD oil products featuring patented nano-sized microemulsion, which aims to maximize bioavailability and absorbability. The company makes oils, chews, treats and topicals formulated specifically for dogs from organically grown Colorado hemp. Partnered with ILoveDogs.com and ILoveCats.com, every product purchased helps fund up to seven healthy meals for shelter dogs, funded through GreaterGood.org and Rescue Bank. Products are sold direct to consumers online through the company's website.

HempWorx

Las Vegas-based HempWorx is a manufacturer of bacon-flavored full-spectrum hemp-CBD oil and beef-flavored treats for dogs. The company's products are veterinarian-formulated and made from natural ingredients, free of GMOs, synthetics and fillers. The privately held company sources organically grown industrial hemp from Kentucky farms. Consumers can also purchase THC-free oils. HempWorx sells both pet and human hemp-CBD products through its online store.

Paw CBD

The pet division of cbdMD, Paw CBD specializes in CBD oil tinctures, treats, chews, CBD-infused peanut butter and topicals for cats, dogs and horses. Paw CBD uses the same broad-spectrum CBD that the parent company uses in human products—but combined with the flavors and textures that pets like. Based in Charlotte, North Carolina, cbdMD sells its products through its online store and in more than 4,000 retail stores.

BlueBird Botanicals

Bluebird Botanicals, a privately held company based in Louisville, Colorado, expanded its product reach to include dogs and cats, saying all mammals have an endocannabinoid system and can experience the benefits of CBD. The company offers Companion hemp-CBD oil and concentrated Companion CBD capsules made from CBD hemp extract and hempseed oil. Bluebird Botanicals sells products through its website, offering a subscription program that automatically ships orders to consumers while offering a discount based on frequency. The company also sells products in more than 500 retail stores nationwide.

ElleVet Sciences

Based in Portland, Maine, ElleVet Sciences makes cannabinoid chews, oils and softgels for dogs and cats. The company is conducting clinical trials through Cornell University's College of Veterinary Medicine in New York. Ellevet's CBD and CBDA products are sold online through the company's website, which offers a direct-to-consumer subscription service.

Suzie's CBD Treats

Suzie's CBD Treats is a vertically integrated operation that starts with a USDA-certified organic hemp farm in Fort Collins, Colorado. The company, which is now based in Wheat Ridge, Colorado, formulates CBD drops, treats, CBD peanut butter and salve for dogs as well as treats and salves for horses and cats. Suzie's sells products online but also through independent retailers across the country. The company supports animal shelters nationwide, providing CBD products to animals in need through donations and discounts.



PET AILMENTS LIKELY TO BE TREATED WITH HEMP-CBD

The U.S. Food and Drug Administration explicitly bans CBD manufacturers from making health claims about their brands. But that doesn't stop consumers from using hemp-CBD to treat their pets for a host of ailments, including back and joint pain—the reason most cited by pet owners in the United States and Canada for purchasing CBD for their animal companions.

Top ailments varied slightly between owners in the two countries. Behind back and joint pain, U.S. adults said episodic and chronic anxiety and stress, arthritis and the promotion of general health and wellness were the biggest health concerns they had for their pets. Canadian adults indicated the same worries, although in a different order—arthritis followed by back and joint pain, chronic anxiety and stress, general health and wellness as well as episodic anxiety and stress.

Another 21% of consumers said they use CBD to treat skin infections or irritation for their pets. Gastrointestinal issues, cancer symptoms, seizures and appetite stimulant were among the other health issues for which pet owners said they would use hemp-CBD to treat their animals.

Another group—the CBD manufacturers—prioritized different benefits, as well, as they target customers in the U.S. and Canada.

Stress and anxiety topped the list of promoted benefits by nearly 20%, followed by pain relief, joint health, immunity support, brain and cognitive health and general well-being. All other benefits—from skin, heart and digestive health to allergy aid, appetite support and seizures and epilepsy—were promoted in marketing materials in less than 5% of cases.

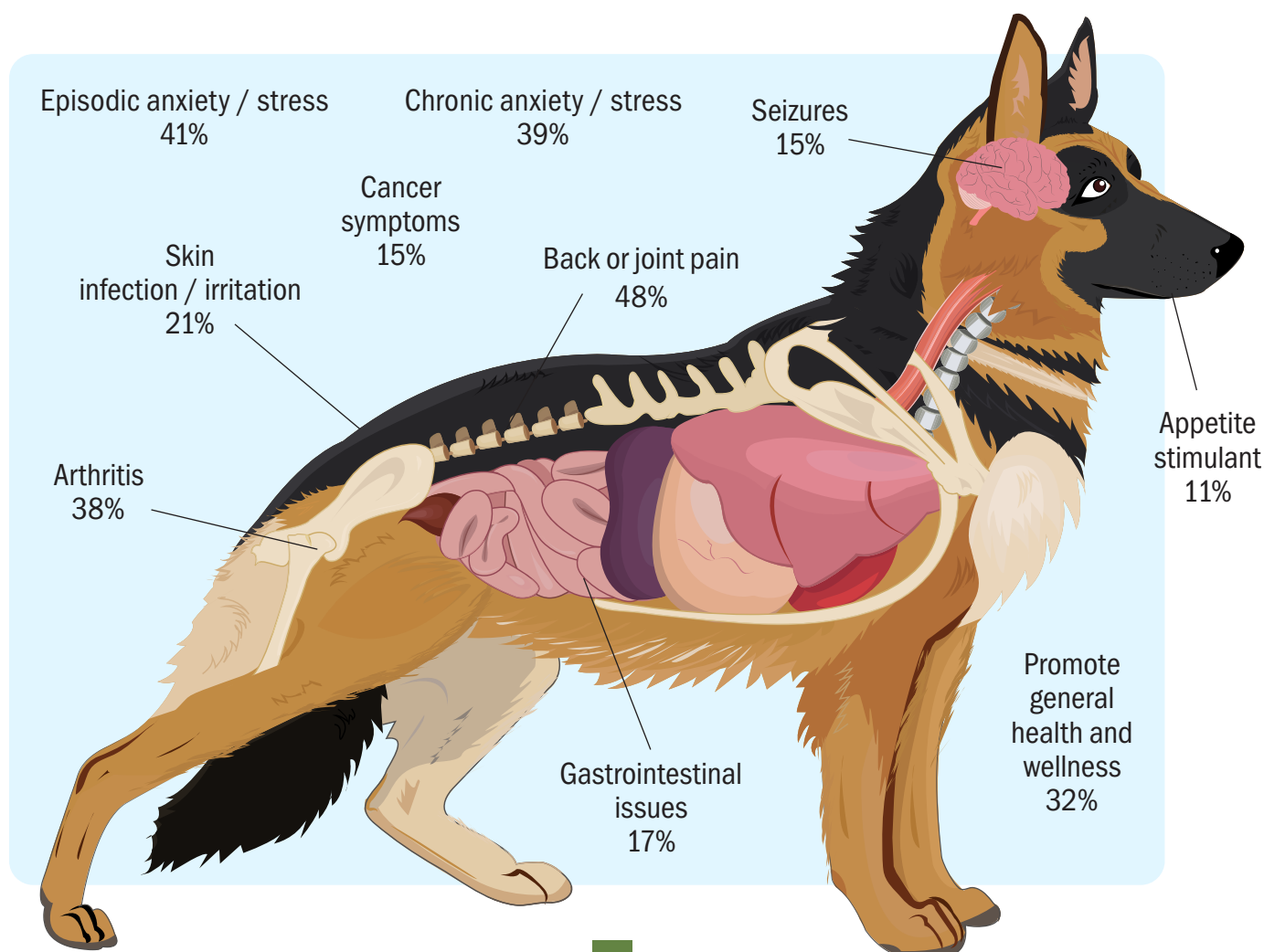
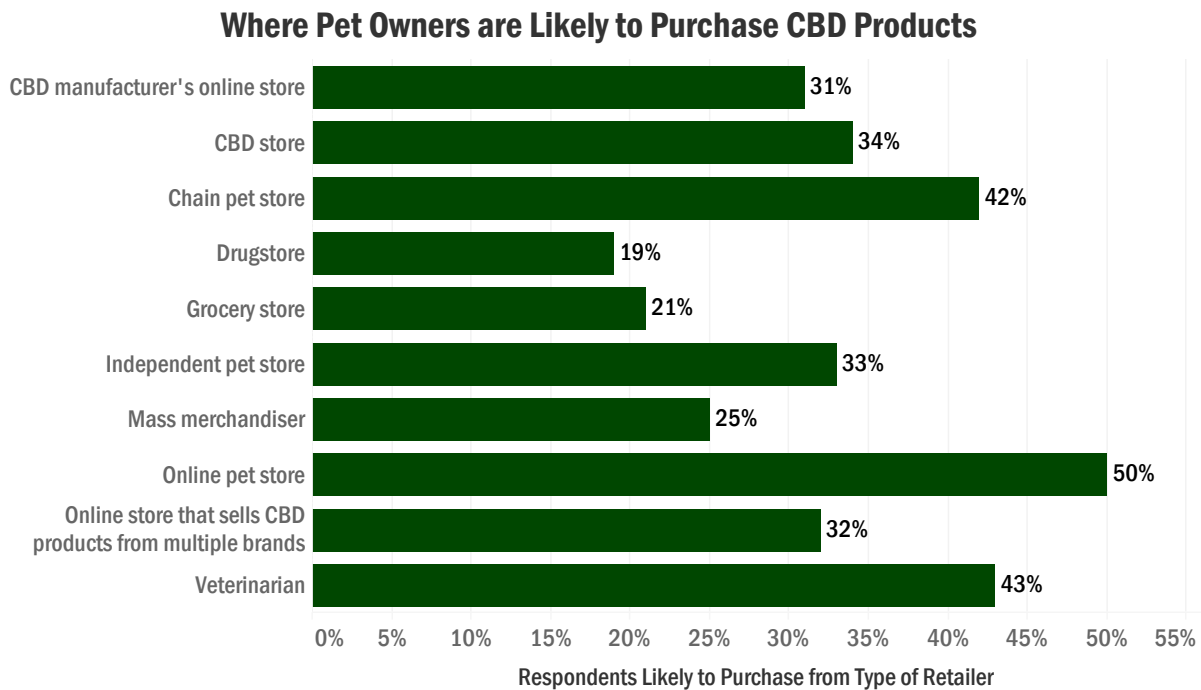


Chart 8: Where Pet Owners Purchase CBD Products

Source: Nielsen "Thinking Beyond the Buzz" CBD study (U.S. & Canada) 2019

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Pet parents have a variety of options for purchasing hemp-CBD products for their fur babies. The hemp industry has boomed over the past two years since the crop became federally legal in the United States, and demand for CBD products has skyrocketed. As a result, retailers of all types have jumped on the bandwagon to carry these products to get a piece of that pie.

In the U.S. and Canada, the top five retail channels where pet owners who are likely to give their pet a hemp-CBD product in the next 12 months say they are most likely to purchase the following hemp-CBD pet products:

- Online pet stores.
- Veterinarian offices.
- Chain pet stores.
- Specialty CBD stores.
- Independent pet stores.

Consumer choices for where they are able to purchase hemp-CBD pet products will be affected in the U.S. over the next year if the FDA does not issue favorable guidance supporting widespread distribution by veterinarians and in traditional brick-and-mortar retail stores.

However, regulators might be challenged by the already broad adoption of these types of products by the time such guidance would come out.

VETERINARY MEDICINE OFFICIALS WEIGH IN ON CBD

Veterinarians are waiting for the U.S. Food and Drug Administration to regulate hemp-CBD products.

During the FDA's first public hearing on CBD in May 2019, the American Veterinary Medical Association (AVMA), a trade organization representing veterinarians and animal health professionals nationwide, sought guidance from the agency on whether cannabinoids can be safely given to pets and farm animals.

Dr. Ashley Morgan of the AVMA inadvertently got the whole 500-seat room laughing when an FDA panelist asked her if veterinarians are giving pet owners CBD.

"No," Morgan said. But after a long pause, she added, "Not legally."

The AVMA told *Hemp Industry Daily* in October that although it is technically illegal for veterinarians to prescribe or recommend unregulated hemp-CBD for pets, the organization and its members recognize the potential clinical benefits of the products.

However, without more research, there are still too many unknowns about hemp-CBD for pets, so, the products still present risks.

Michael San Fillippo, a spokesman for the organization, provided *Hemp Industry Daily* with insight into the AVMA's position on hemp-CBD pet products:

From an animal-health standpoint, what are the benefits of giving CBD to pets? What are the potential drawbacks?

What we know about CBD to date suggests there may be clinical value, so we're excited about that potential. However, we have several concerns:

The benefits are unproven by science at this point. While there has been some research conducted, we need to see more: How does it act in the body, how does it react with other drugs, what's the proper dosage, what are the side effects?

Multiple assessments indicate that as many as 70% of cannabis-based products available may not contain the concentrations indicated on the label. Some may not contain the product of interest at all.

The FDA has not approved any cannabis-derived drugs for animals. Any CBD products that currently include therapeutic claims for animals are being illegally marketed.

There is definite veterinary interest in these products as potential therapeutic agents, therefore, we will continue to encourage manufacturers of these products to demonstrate their efficacy and safety and seek FDA approval for any therapeutic claims.

If veterinarians are not allowed to prescribe CBD, can they provide advice to patients regarding the use of these products?

Veterinarians cannot prescribe CBD for animal use, as there are no FDA-approved cannabis-derived drugs on the market. The use of unapproved drugs can put patients at risk and may create legal risk for veterinarians who administer, prescribe, dispense or recommend them because they have not been evaluated for efficacy and safety by the FDA.

Risk may be heightened when approved treatments are available and are not utilized, or when patients for which unapproved drugs have been administered, prescribed, dispensed or recommended are adversely impacted through either side effects or treatment failures.

What advice can the AVMA offer for hemp-CBD pet product makers who are currently navigating the space while waiting out regulatory uncertainty with the FDA?

The AVMA encourages manufacturers of these products to demonstrate their efficacy and safety and seek FDA approval for any therapeutic claims.

What research is currently underway to study the effects of including hemp and CBD in pet food?

At our annual convention this year, we did hear about several studies currently underway or in development concerning CBD products for pets.

Some examples of current research underway include studies on how cats and dogs process CBD in their bodies, the effectiveness of different delivery methods of CBD, and CBD as a possible treatment for canine epilepsy.

PET PRODUCT RESEARCH UNDERWAY

Here are some examples of research projects currently in progress in collaboration with universities and commercial CBD pet product brands:

California-based Medterra CBD collaborated with a team of Baylor College of Medicine researchers to conduct scientific studies on the therapeutic effects of CBD for arthritic pain in dogs. Published in the journal PAIN, the study showed that in dogs diagnosed with arthritis, CBD treatment significantly improved quality of life, as documented by both owner and veterinarian assessments. Arthritis is a common condition, affecting one out of five dogs in the United States, according to the American Kennel Club. The results of the study were encouraging, according to Dr. Matthew Halpert, research faculty in the Department of Pathology and Immunology at Baylor. Halpert said nine of 10 dogs showed benefits that remained for two weeks after the treatment stopped, and the group did not detect alterations in the blood markers measured. He added that the group studied dogs because experiential evidence shows that the biological characteristics of arthritis in dogs closely resemble those of the human condition.

ElleVet Sciences in Portland, Maine, is conducting clinical trials through Cornell University's College of Veterinary Medicine in New York. ElleVet's first clinical trial using CBD and CBDA for dogs was published in 2018, showing that 80% of dogs using it demonstrated significant increases in comfort and mobility. As a result, Cornell University veterinarians recognized ElleVet Science as a scientific standard, according to the company.

Unrelated to domestic pets but significant to animal-health research, several studies are underway on the effects of large animal livestock from hemp in animal feed, including two recent examples:

Oregon State University faculty are replacing alfalfa with different amounts of hemp biomass in the feed for five groups of sheep for a test trial to study how the plant impacts animals and their meat.

Kansas State University researchers received a \$200,000 federal grant from the U.S. Department of Agriculture to study the effects of feeding industrial hemp to cattle. The researchers want to know whether hemp feed can be used without THC intoxication. They believe that hemp leaves and residual plant fibers are "mostly cellulose-containing plant materials" that could serve as feed.

Hemp is not currently recognized by the Association of American Feed Control Officials as an allowed ingredient in commercial animal feed. The association includes state agriculture regulators and federal and international agencies, including the FDA's Center for Veterinary Medicine and the Canadian Food Inspection Agency.