The second section of this four-part series will focus on cannabis industry terminology as well as dangerous trends in the cannabis product production arena of which clinicians should be aware in order to provide their clients with complete harm-reduction education.

Participants will learn to interpret certificates of analysis (COAs) on cannabis products in order to evaluate a product for safety, clinical interactions, and therapeutic potential. Additionally, this lecture will briefly review product production techniques and their influence on both legal and safety issues.

We will discuss legal and ethical issues within the current veterinary cannabis climate, precautions clinicians should take, appropriate medical recordkeeping, and the justification for always providing pet owners with harm-reduction education.

Cannabis genetics & production

The *Cannabis* genus contains multiple plant species that are capable of successful crossbreeding and the flourishing medical and recreational cannabis markets have resulted in complex interbreeding between all *Cannabis* species. From a clinical perspective, understanding the taxonomical differences between *Cannabis spp* is less important than obtaining a working knowledge of which active molecules are available in the final produced product. However, the current legal restrictions and specific wording within cannabis policies requires that practitioners understand, at a minimum, the basic differences between the species and subspecies of plants within this genus.

Technically, the term "cannabis" can indicate any plant within the *Cannabis* genus. From a regulatory perspective, the distinction between hemp and marijuana is defined by the amount of THC (a single molecule in cannabis resin) in the plant at the time of harvest.

Hemp = *Cannabis* subtype bred for the production of fiber. These cannabis plants contain < 0.3% THC at the time of harvest and may be purchased over-the-counter.

Marijuana = *Cannabis* subtype bred for the production of resin. These high resin-producing plants contain more medicinal compounds than fiber-producing plants (hemp). These plants contain > 0.3% THC at the time of harvest and must be purchased at a dispensary.

These regulatory definitions of the *Cannabis* subtypes (hemp and marijuana) have important legal implications for veterinary practitioners working with these products.

Implications of current legal status: federal, state & corporate

Both veterinarians and physicians frequently carry a DEA license that allows them to prescribe drugs on Schedules 2-5. Marijuana is currently listed as a Schedule1 substance. Thus, veterinarians are not allowed to prescribe marijuana.

States that have instituted medical cannabis laws (legalized medical cannabis for humans) have avoided this DEA restriction for physicians by creating specific policies that allow physicians to *recommend* (not prescribe) cannabis to their patients. However, veterinarians are not included in these work-around policies. Veterinary practitioners should understand that there are currently no laws allowing cannabis to be purchased specifically for a pet.

The 2018 Farm Bill removed industrial hemp from the DEA controlled substances list completely. However, marijuana is still listed as a Schedule 1 substance. Consequently, understanding the regulatory difference between hemp and marijuana as well as the subtype of plant from which a product was derived is essential.

Policies for veterinarians

Even though there continues to be unresolved issues with veterinarians "prescribing" or "recommending" cannabis products, the veterinarian and the veterinary health care team should provide pet parents with:

1. Harm reduction – provide pet parent with appropriate & complete education
2. Explore medical benefits – extrapolation from human and animal studies
3. Monitoring – identification of therapeutic effect and/or toxicity

Veterinary practitioners must ensure that they understand the state-specific and corporation-specific policies that apply to their clinic while still taking action to provide safety information and guidance to their clients. The veterinary community must be active in policy-making decisions to ensure that medically sound, patient-focused policies are implemented in your clinic, state, and eventually, at a federal level.

Human vs. veterinary cannabis markets

As the cannabis industry continues to grow, consumers deserve and are demanding high quality products. However, the needs of the human and veterinary markets have important differences in the definition of a "quality" product. Products appropriate for human medical patients are not automatically safe for animal administration. The contamination testing limits that are appropriate for human patients may be dramatically different from those that are safe for animals. Additionally, products from the human cannabis market that are utilized for animals should be carefully evaluated to avoid extra additives, coloring or sweeteners. Pet parents should be carefully counseled to avoid products with known toxins such as xylitol, chocolate, raisins, etc.

Additionally, veterinary practitioners should understand which cannabis product formulations are readily available to guide pet parents in the selection of a pet-safe product. Routes of cannabis administration all fall into one of the categories below:

1. Inhalation – currently, most useful for humans

2. Ingestion – consumed by mouth

   "Edibles" commonly refer to cannabis-infused gummies, cookies, drinks, etc. These products are often high in THC and more likely to contain ingredients that are unsafe for animals.

   Pills, capsules and tablets are difficult to split into smaller doses accurately.

   Cannabis in a liquid base is called a tincture. Instruct pet parents to avoid alcohol-based tinctures and look for an animal-safe oil base. Tinctures currently provide the safest, most accurate, and scalable route of cannabis administration in animals.
3. Topically-applied cannabis products are difficult to use in animals due to their haircoat, however, this route of administration may have some interesting applications in the future.

Veterinary liability in uncharted medical territory

In the murky atmosphere surrounding cannabis use in the veterinary industry, it is essential that the veterinary community define a clear set of parameters for answering cannabis questions. There is a clear set of risks associated with cannabis administration to an animal without veterinary oversight. The veterinary team should be involved with a pet parent's decision to administer cannabis to their animal in order to guard against pharmaceutical interaction, maintain a complete medical history on every patients, as well as strengthen the Veterinary-Client-Patient-Relationship (VCPR).

The importance of Harm Reduction Education (HRE) within the veterinary cannabis industry cannot be overemphasized. HRE should be implemented any time the veterinary team becomes aware of a *client-initiated treatment* – cannabis or otherwise. The goal of the veterinary team should be to provide the education that respects the pet parents' decision and goals while emphasizes patient safety and wellbeing.

Principles of product review

One of the most important harm reduction services that the veterinary team can provide to a pet parent is to evaluate a cannabis product for safety and potential efficacy. This review should include evaluation of manufacturing techniques, production methods, animal-appropriate formulation, and examination of that product's Certificate of Analysis (COA).

Certificate of Analysis (COA)

A COA provides the practitioner with the molecular profile of the cannabis product as well as evidence of freedom from contaminants (pesticides, heavy metals, mold, bacteria, residual solvents).

A thorough review of a product's COA allows the practitioner to evaluate the product for safety, potential efficacy in specific conditions, and appropriate pricing.