

## Efficacy of Standard Process Full Spectrum Veterinary Formula (VF) Hemp Oil in enhancing Canine Quality of Life - A Randomized Blinded Cross-Over Trial

TECHNICAL  
PAPER

*Written by: Chinmayee Panda, Ph.D, Clinical Research Scientist*

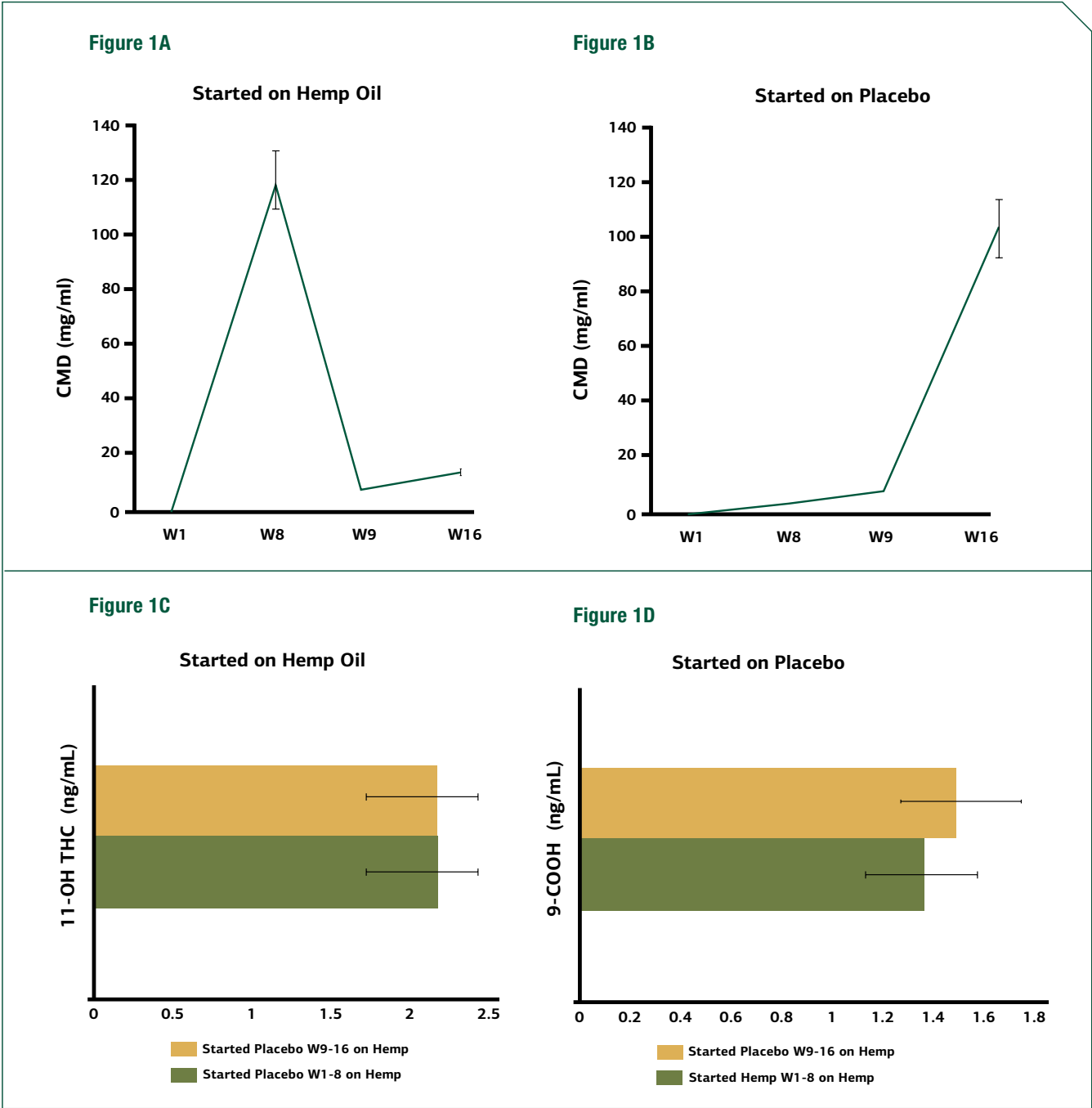
Dogs often experience discomfort and inflammation related to joint health challenges, which can greatly impact their quality of life. In this clinical study, we aimed to evaluate the effectiveness of hemp-derived phytocannabinoids, rich in cannabidiol (CBD) for improvement of various aspects of quality of life including body discomfort, inflammation response, mobility, and activity.

Dogs have an important biological system called the Endocannabinoid System (ECS) that helps regulate physiological processes and maintain balance. The ECS consists of endocannabinoids, receptors, and enzymes.<sup>1-3</sup> Hemp oil, which contains phytocannabinoids like CBD, can interact with the ECS and provide therapeutic benefits without psychoactive effects.<sup>4,5</sup> This can be particularly beneficial for dogs with joint health challenges and inflammation, as it can improve their mobility and activity levels.<sup>6,7</sup> The full spectrum hemp oil used in this study is sourced from Standard Process, known for its purity, potency, and organic certification. Each 1 mL serving of VF Hemp Oil provides a consistent dosage of 15 mg of phytocannabinoids, ensuring standardized formulation.<sup>8</sup>

The study involved a randomized, placebo-controlled, double-blind, cross-over design conducted over a 16-week period. Thirty-seven dogs of varying breeds and sizes, aged between three and twelve years, were randomly assigned to receive either VF Hemp Oil or a placebo product (organic extra virgin olive oil) for eight weeks. They then switched to the alternate product for the following eight weeks. The dosage of VF Hemp Oil administered was 2 mg/kg body weight twice daily, which has been confirmed as safe for both dogs and cats.<sup>9</sup> The dogs' daily activity was monitored using Fit Bark accelerometers, and various assessments were conducted at four time points to evaluate body discomfort, inflammation levels, gait and physical activity, and serum proinflammatory markers.<sup>10</sup>

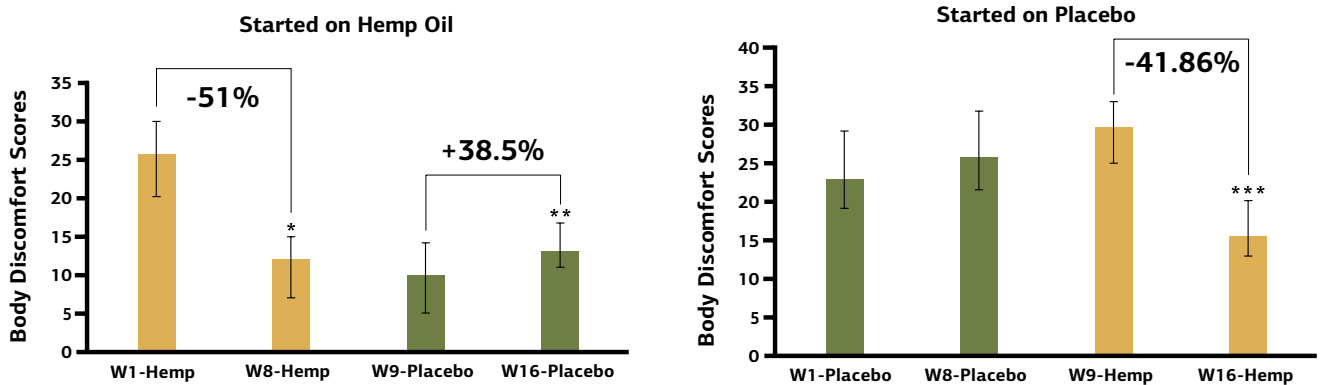
No adverse effects were reported throughout the study, and there was no significant change in the dogs' body weight. The bioavailability analysis (Figure 1) confirmed successful absorption and distribution of CBD in the dogs' serum, without elevated levels of psychoactive compounds known as delta-9-tetrahydrocannabinol (THC), commonly found in cannabis (> 0.3% THC) but not hemp (< 0.3 % THC<sup>13</sup>). Elevated liver enzymes after consumption of CBD oil are a concern among veterinarians.<sup>11</sup>

There were no significant changes in liver enzymes, indicating the safety of VF Hemp Oil at the administered dose. The dogs receiving VF Hemp Oil experienced a significant reduction in body discomfort (Figure 2) compared to the placebo group, as evaluated by the Canine Brief Pain Inventory (CBPI) questionnaire.<sup>12</sup> The VF Hemp Oil group also showed a notable decrease in proinflammatory markers (Figure 3), indicating reduced inflammation. Additionally, VF Hemp Oil positively impacted dogs' physical activity levels (Figure 4), leading to improved energy and engagement. There was a positive trend in gait and mobility (Figure 5) with VF Hemp Oil consumption, suggesting an increase in optimal limb function.



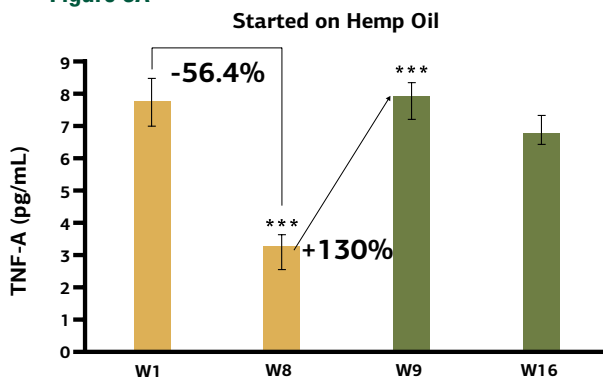
**Figure 1.** Bioavailability analysis confirms successful absorption and distribution of CBD in dogs' serum, supporting therapeutic potential of hemp-derived phytocannabinoids.

**Figure 2A**

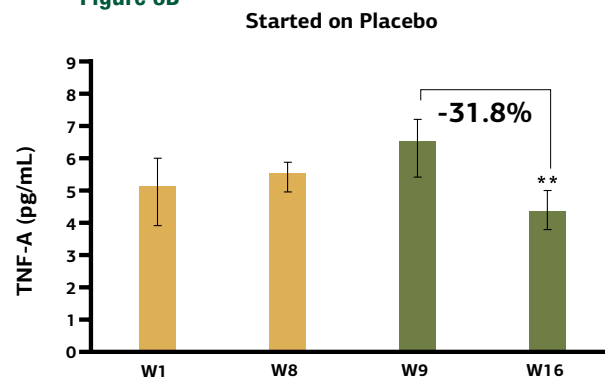


**Figure 2.** During the intervention phase, the administration of hemp-derived phytocannabinoids resulted in a significant reduction ( $p < 0.05$ ) in body discomfort scores compared to the placebo phase.

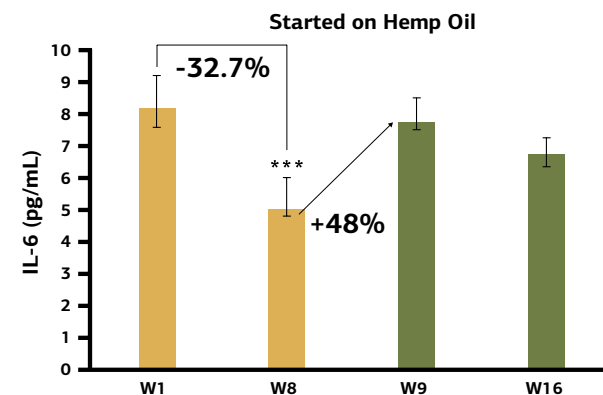
**Figure 3A**



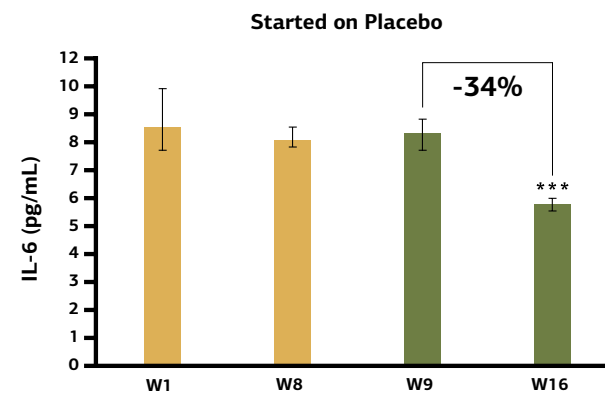
**Figure 3B**



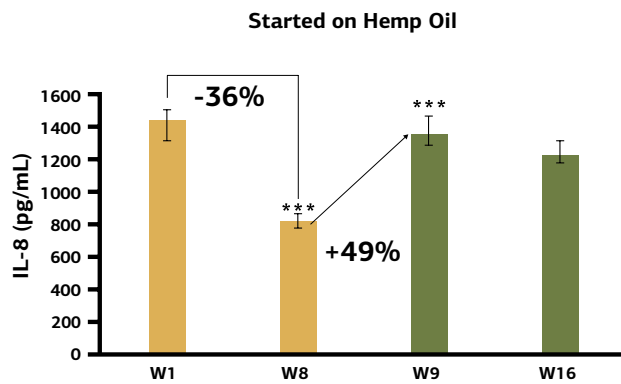
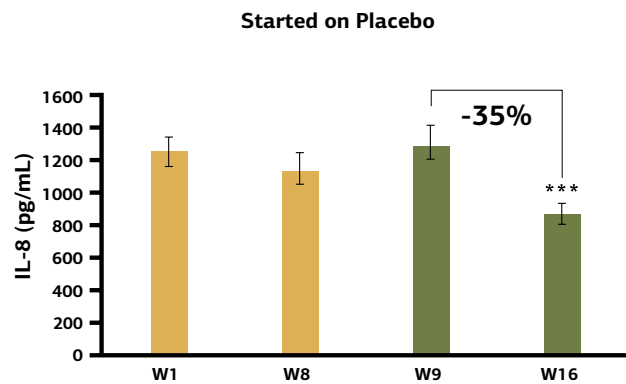
**Figure 3C**



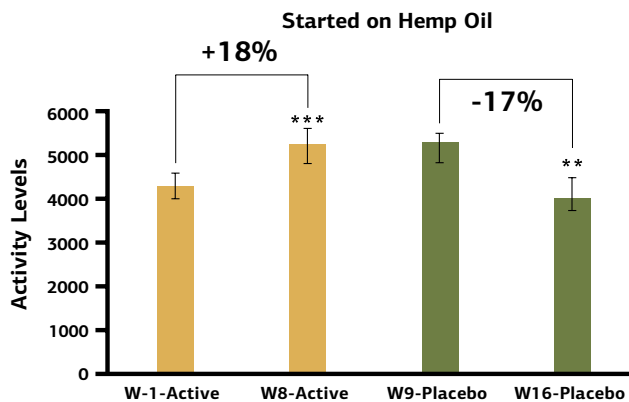
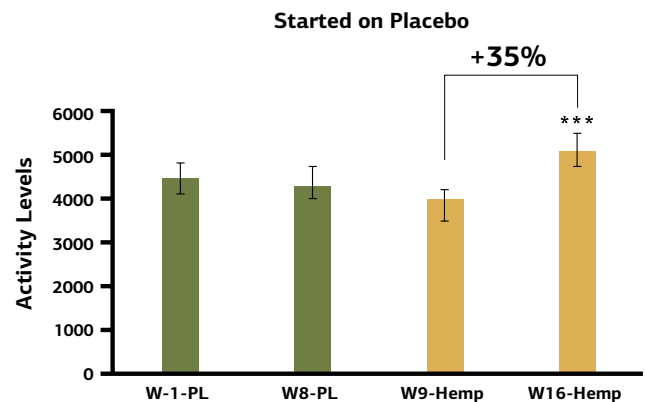
**Figure 3D**



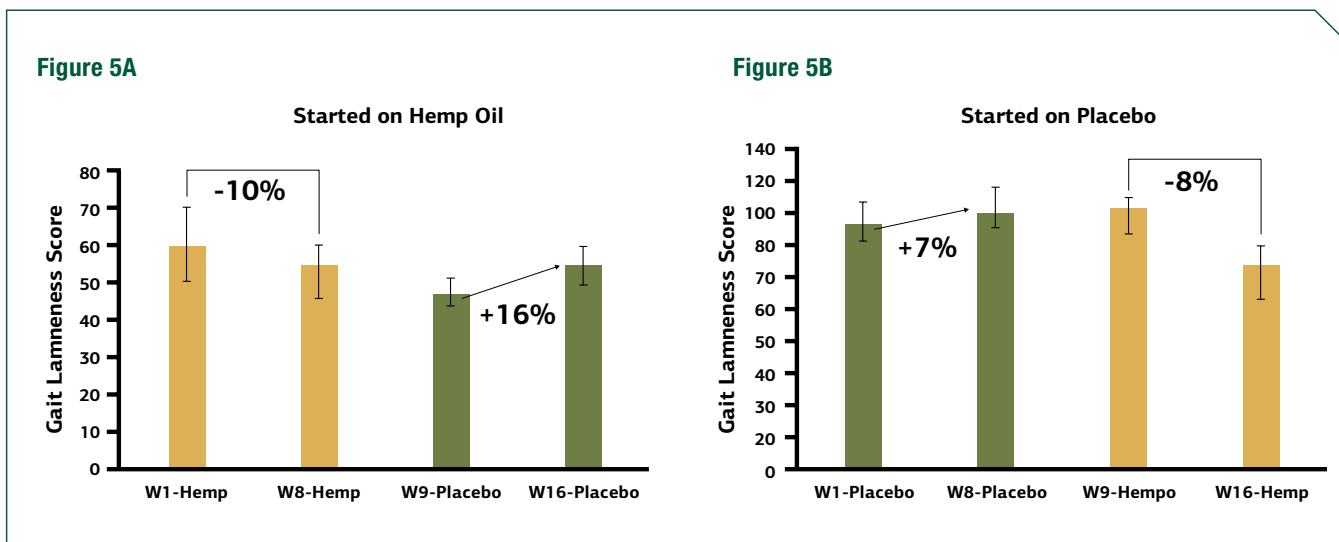
**Figure 3.** During the intervention phase, the administration of hemp-derived phytocannabinoids resulted in a significant reduction ( $p < 0.05$ ) in proinflammatory markers (interleukin-6, interleukin-8, and tumor necrosis factor-alpha) in dogs' serum compared to the placebo phase.

**Figure 3E****Figure 3F**

**Figure 3.** During the intervention phase, the administration of hemp-derived phytocannabinoids resulted in a significant reduction ( $p < 0.05$ ) in proinflammatory markers (interleukin-6, interleukin-8, and tumor necrosis factor-alpha) in dogs' serum compared to the placebo phase.

**Figure 4A****Figure 4B**

**Figure 4.** Hemp-derived phytocannabinoids positively impact dogs' physical activity status, as shown by the Fitbark accelerometer data.



**Figure 5.** Hemp-derived phytocannabinoids positively impact dogs' gait and mobility.

## CONCLUSION

Based on the findings of this study, Standard Process® farm-derived VF Hemp Oil has been shown to enhance canine quality of life by reducing body discomfort, managing inflammation, and potentially improving overall activity and gait. The administered dosage of 2 mg/kg body weight twice daily was effective in producing these positive outcomes. By incorporating Standard Process VF Hemp Oil into the care of dogs, we can help them live happier and more comfortable lives.

## REFERENCES

---

1. Silver, R. J. (2019). The Endocannabinoid System of Animals. *Animals*, 9(9).
2. Di Marzo V et al. The endocannabinoid system and its therapeutic exploitation. *Nat Rev Drug Discov* 2004;3(9):771-784.
3. DiMarzo V et al. The endocannabinoid system and its modulation by phytocannabinoids. *Neurotherapeutics*. 2015;12(4):692-698.
4. Bradley S, Young S, Bakke AM, Holcombe L, Waller D, Hunt A, Pinfold K, Watson P, Logan DW. Long-term daily feeding of cannabidiol is well-tolerated by healthy dogs. *Front Vet Sci*. 2022 Sep 21;9:977457.
5. Fidel, J. L., Moreau, M., & Labie, J. (2021). Use of Cannabinoids in Animal Models of Pain. *Vet Sciences*, 8(5), 80.
6. Gamble, L. J., Boesch, J. M., Frye, C. W., Schwark, W. S., Mann, S., Wolfe, L., ... & Wakshlag, J. J. (2018). *Frontiers in veterinary science*, 5, 165.
7. Kogan, L., Schoenfeld-Tacher, R., Hellyer, P., & Rishniw, M. (2019). *Frontiers in veterinary science*, 5, 338.
8. <https://www.standardprocess.com/products/vf-hemp-oil>
9. Bradley S, Young S, Bakke AM, Holcombe L, Waller D, Hunt A, Pinfold K, Watson P, Logan DW. Long-term daily feeding of cannabidiol is well-tolerated by healthy dogs. *Front Vet Sci*. 2022 Sep 21;9:977457.
10. <https://www.fitbark.com/learn>
11. McGrath S, Bartner LR, Rao S, et al. A report of adverse effects associated with the administration of cannabidiol in healthy dogs. *J Am Holistic Vet Med Assoc* 2018; 52: 34-38.
12. <https://www.vet.upenn.edu/docs/default-source/VCI/canine-bpi-user's-guide-2017-07>
13. <https://www.fda.gov/news-events/congressional-testimony/hemp-production-and-2018-farm-bill-07252019>



**Standard Process**  
V E T E R I N A R Y F O R M U L A S <sup>TM</sup>