

Effect of dietary intake of L-Tryptophan supplementation on working dogs demonstrating stress related behaviours

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Manifestations of anxiety in dogs include increase or decrease of the grooming behaviour, increase of agonistic behaviours, lower/higher food intake, increased vocalization and increase of marking behaviours. These signals commonly happen in dogs with stress related behaviours and can be evaluated by an ethogram. Usually, these behaviours are associated with the animal's reaction to the environment that they can't control, or to a lack of stimulus. Certain factors contribute to the demonstration of stress such as confinement, lack of physical space, and no environmental stimulus. These behaviours when properly measured, by a specific classification system, can lead to an evaluation of the animal welfare.

The aim of the current study is to evaluate the possible effect of L-Tryptophan (L-Trp) on the general behaviour of dogs and to assess the therapeutic efficacy of short-term supplementation of L-Trp on behavioural responses associated with anxiety and stress related disorders.

In this particular study we used working dogs, from the National Guard. A total of 30 dogs housed in kennels, 25 males and 5 females were observed. All animals went through a health check-up just before the start and at the end of study. Dogs were observed during 3.5 months (2 weeks for habituation, 4 weeks without supplementation and 8 weeks with supplementation), 5 days *per week*. Each data recording session took 10 minutes of detailed observation *per dog* by a trainer observer involving a continuous focal sample. This was a double blind controlled study, where animals were randomly assigned to dietary supplementation of L-Trp starting at the 7th week (14 dogs took L-Trp dietary supplementation and 16 took placebo dietary supplementation). L-Trp daily dose was 10-15mg/kg administrated with daily meals.

After L-Trp supplementation all the Stereotypy's ($p > 0.05$), Bark ($p < 0.05$) and Stare ($p < 0.01$) behaviours decreased. These results allow us to say that L-Trp supplementation had an effect in changing the frequency of the stress related behaviours, decreasing anxiety signals. Consequently, L-Trp supplementation can be a very efficient tool to help treat some behavioural disorders of animals as part of behaviour therapy. As the L-Trp supplementation decreased some of the dog's anxiety signs, we conclude that this effect improved their welfare.