

TAPPING INTO THOSE 'GUT FEELINGS': IMPACT OF *Bifidobacterium longum* (BL999) ON ANXIETY IN DOGS

Author: Ragen T.S. McGowan, PhD

Anxiety is a big concern for many pet owners who want to see their dogs live happy and comfortable lives. Chronic behaviour issues can be detrimental to the pet-owner relationship, and in this regard behavioural issues related to anxiety are among the top reasons that pet dogs are relinquished to shelters.

There is mounting evidence in the literature that manipulation of the gut microbiota can influence anxious behaviour specifically via the gut-brain axis. Thus, probiotic supplementation has potential as an option to help manage symptoms of anxiety in dogs.

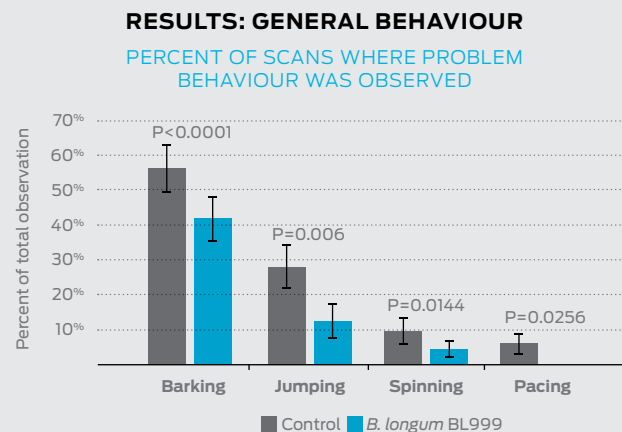
We assessed the impact of BL999 on anxious behaviour in dogs with 24 anxious Labrador Retrievers using a holistic approach incorporating both behavioural and physiological parameters. Each dog served as his or her own control and participated in two phases of the study in a cross-over design.

Dogs were maintained on a complete and balanced diet and supplemented with either BL999 or a placebo for six weeks. All dogs were then subject to a three-week washout period after which they crossed over to the opposite treatment for an additional six weeks.

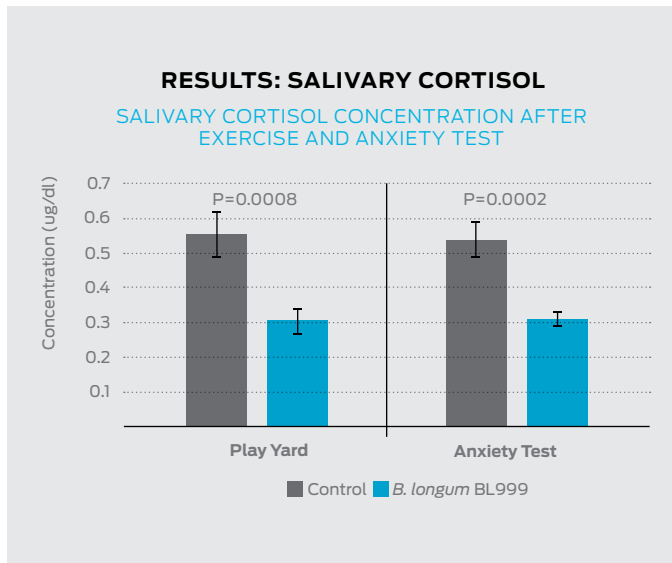
During each phase the dogs' typical behaviour in response to normal day-to-day stimuli was observed directly using a scan sampling method to look for the presence or absence of a defined set of anxious behaviours. In addition, each dog was subject to a formal anxiety test to assess non-social,

social and separation anxiety at the end of each supplementation phase. Non-invasive physiological measures were assessed throughout the evaluation. Heart rate and heart rate variability were recorded through the entirety of the formal anxiety test and salivary cortisol concentrations were assessed prior to and following the formal anxiety test.

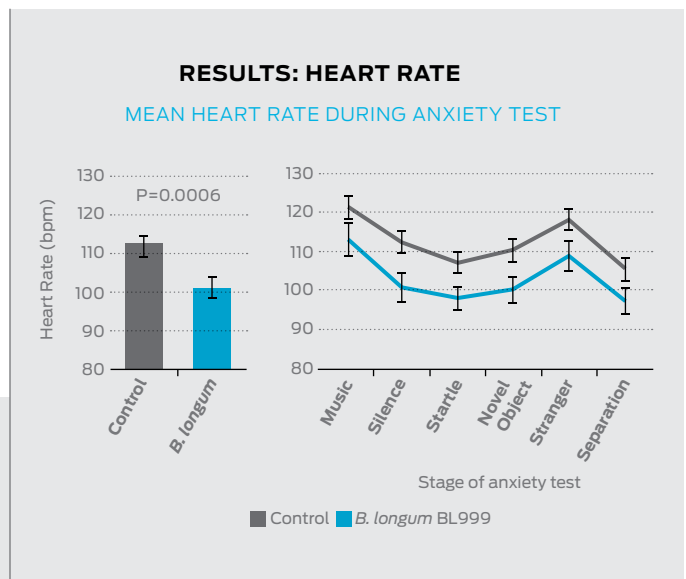
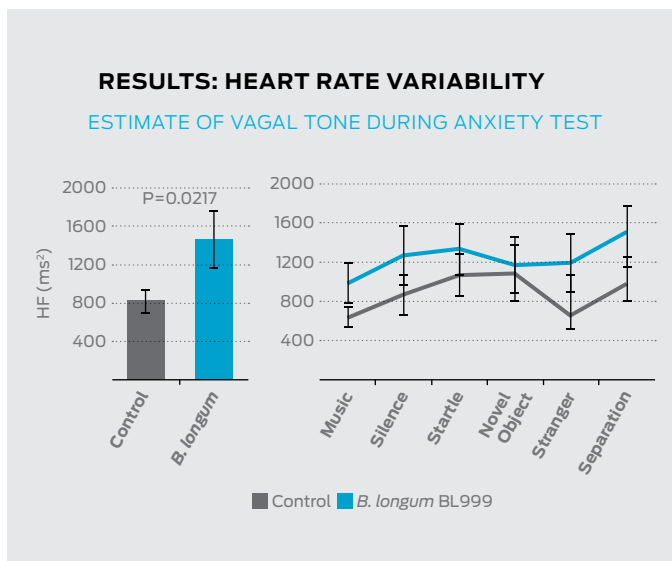
We found a significant impact of BL999 on day-to-day anxious behaviour (scan samples) with dogs showing an improvement in their behaviour when supplemented with BL999 as compared to when they were supplemented with the placebo. This included significant reductions in barking ($P < 0.0001$), jumping ($P < 0.01$), spinning ($P < 0.05$) and pacing ($P < 0.05$).



During the formal anxiety test, dogs supplemented with BL999 showed increased exploratory behaviour in a novel environment compared to when they were supplemented with the placebo ($P < 0.05$). In addition, dogs had reduced salivary cortisol concentrations in response to both exercise and anxiety inducing stimuli when supplemented with BL999 as compared to when they were supplemented with a placebo ($P < 0.001$).



When considering cardiac activity, dogs showed a decrease in heart rate ($P < 0.001$) and an increase in heart rate variability (HF: $P < 0.03$; RMSSD: $P < 0.001$) indicating a more positive response to anxiety inducing stimuli when supplemented with BL999 compared to when they were supplemented with a placebo.



Thus, from both a behavioural and physiological standpoint BL999 had an anxiolytic effect on anxious dogs and could serve as a useful tool in the development of management plans to improve the well-being of dogs who suffer from anxiety.

Trudelle-Schwarz McGowan, R. Tapping into those 'Gut Feelings': Impact of BL999 (*Bifidobacterium longum*) on anxiety in dogs. ACVB Symposium 2018.

To find out how Calming Care can make a difference to your patients, speak to your Purina® Pro Plan® Veterinary Diets Representative or call:

Australia: 1800 738 238
New Zealand: 0800 738 847

Purina trademarks are owned by Société des Produits Nestlé S.A.

