

## **Transcript of 2021 3MT® presentation by Claire Mindus, PhD Animal Biosciences candidate at the University of Guelph**

Do you sometimes get snappy when you're hungry? Yeah? Have you ever wondered why? Well, your gut communicates with your brain and can influence how you think, how you feel, and how you behave. And actually, no, you don't want to hear yet, but also what is living inside your gut. In there, there are millions and millions of bacteria living in your digestive tract, and they all have a potential role to play.

And just as in humans, the gut's microbiota can dictate behaviour in animals. For example, some chickens can get really nasty. Pecking is a natural behaviour of chickens. However, sometimes birds peck other birds, and they pull out their feathers. This behaviour called "feather pecking" can lead to damages to the feather cover, and no one likes a bald chicken including the chicken. It affects their thermoregulation, communication, movement, and in the worst cases of feather pecking, it can lead to skin damage or even cannibalism. So, this is a major welfare issue for chickens all over the world.

For the longest time, we believed that feather pecking was being triggered by stress and frustration. But what if there is more to it? What if they act like this because something is wrong here, because something is messed up here in the first place? And what if I told you chickens who feather peck a lot actually have an unbalanced gut microbiota and are lacking specific gut bacteria called *Lactobacillus* that we know are beneficial and protective against stress.

So, this where my research comes in. I had to look at this missing *Lactobacillus* bacteria and chose a very specific strain, the *Lactobacillus rhamnosus*. This strain is known to be a probiotic, that is beneficial for health when ingested in the right amount. But this strain also helps alleviate abnormal behaviours in mammals. So, why not try it in chickens? So, I supplemented this *Lactobacillus rhamnosus* to each of my chickens to see if it would help prevent feather picking behaviour to happen, even on stressful conditions, and the results were flawless.

I found that stress triggered feather picking behaviour in a group of birds who received a placebo, but these did not happen in a group of birds who received the bacteria. Now imagine a farm with thousands and thousands of chickens. Farmers do not have the time to supplement each and every one of those chickens individually and everyday like I did.

So, now my next steps are going to bring these promising to the farms, and I am confident with the right methods we will manage to find an efficient way to prevent feather picking behaviour and will improve the welfare of millions of chickens all over the world.

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