OXYTETRACYCLINE EXPRESS:

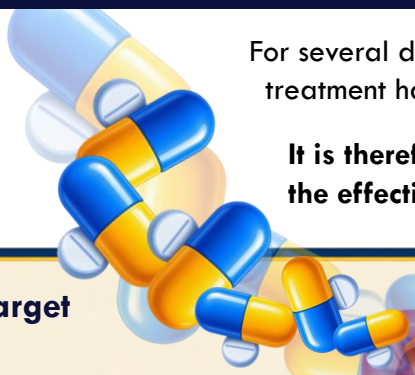
A Journey Through the Gut Microbiota of Laying Hens

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Avian colibacillosis, caused by certain strains of **avian pathogenic *E. coli* (APEC),** is one of the **leading causes of mortality** among laying hens in Canada



For several decades, the only available treatment has been **oxytetracycline…**

It is therefore essential to preserve the effectiveness of this antibiotic.

When oxytetracycline is administered, it does not target only the bacteria responsible for the disease.

It also passes through this microbial community and can alter its balance.

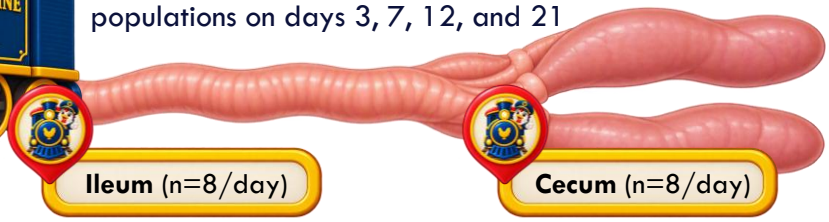




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But how do different treatment dosages affect bacterial populations in healthy chickens?

Two dosages, a single passage through the gastrointestinal tract, and an assessment of bacterial populations on days 3, 7, 12, and 21

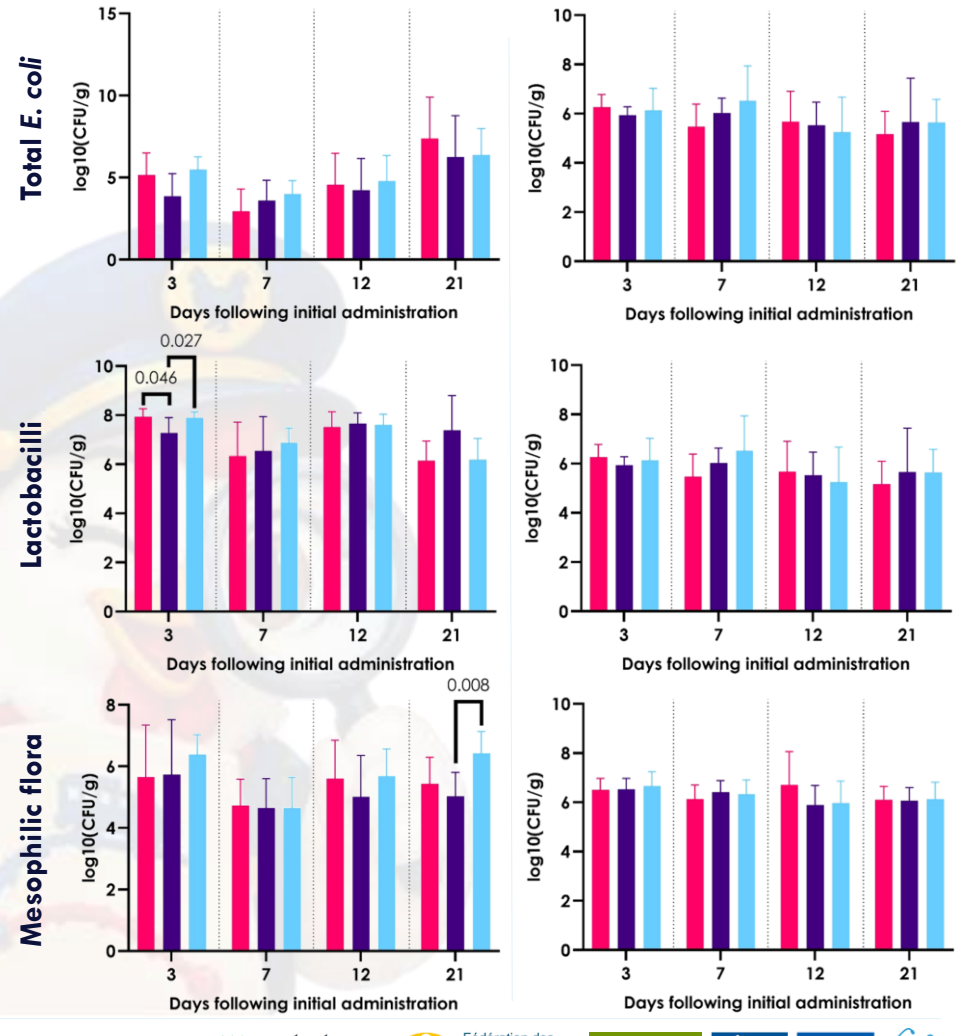


Ileum (n=8/day)

Cecum (n=8/day)

33	**Control** Non-treated
33	**Treated** 330 mg/kg in feed x 3 days
32	**Treated** 110mg/kg in feed x 7 days

Differences between experimental groups analyzed using the nonparametric Kruskal-Wallis test. $p < 0.05$ indicates a significant difference.



OBSERVATIONS:

The treatments had **no effect on total *E. coli* levels.**

A **difference** was observed in the **lactobacilli in the ileum one day after the end of the three-day treatment,** but **no changes** were detected **in the cecum.**

A **difference** between the treated groups was still evident in the **mesophilic flora of the ileum 21 days after treatment.**

<u>Take-home message</u>: a higher dose of oxytetracycline appears to disrupt the gut bacteria more significantly and slow their return to normal.

NEXT STOP:

The Journey of the Oxytetracycline Express Among Sick Chickens

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