

INCIDENCE OF PATHOGENIC ORGANISMS IN DIFFERENT VARIETIES OF A COMMERCIAL RAW MEAT-BASED DOG DIET

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Introduction

Domestic dogs are the most commonly owned animal in today's society and have shared a common environment with humans for thousands of years. PFMA provides data revealing the increase in raw dog feed 22% in 2010 to 24% between 2013 – 2018 and there is further suggestion it has risen to 26% (PFMA). PFMA currently has a handful of 81 member companies which represent 90% of the UK pet food market (manufacturers and suppliers) (Pfma.org.uk, 2019). Raw diet is also known as (BARF) Bones and raw food or (RAP) raw animal products. Raw feeding is a diet for domestic dog composed of uncooked meat. Pathogens are known to cause disease to its host. The most common foodborne bacterial pathogen associated with uncooked meat are Salmonella spp., Staphylococcus Aureus, Escherichia Coli, Campylobacter Jejuni, Listeria Monocytogenes, Clostridium Perfringens and Yersinia Enterocolitica (Bantawa et al., 2018).

Objectives: To identify the different pathogenic species and colony count present in commercial raw meat dog food.

Aim: To investigate the presence of pathogens in commercial raw meat diets for dogs

Method

The selective agar plates used is Listeria (oxford) CM0856, Listeria brilliance, salmonella chromogenic CM1007, Brilliance E. coli agar CM0956, Selective E. coli and Campylobacter. The selective agar plates are either autoclaved 121 °c or bring to the boil 240 °c the medium is cooled, and supplement is added with 2ml of sterile water and poured into petri dish. Dilution of meat sample was made from 10-1 to 10-4 100ul of sample duplicated twice for each selective agar plate and incubated according to requirements.

Results

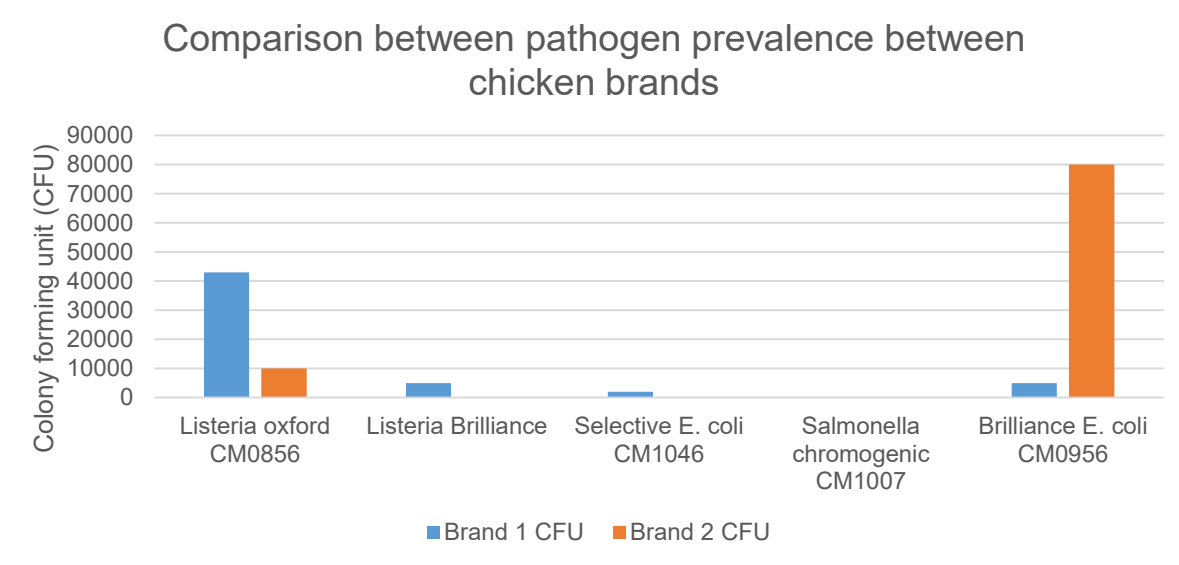


Fig 1 (i): Prevalence of the respective microorganisms in chicken brand 1 and 2

n=4

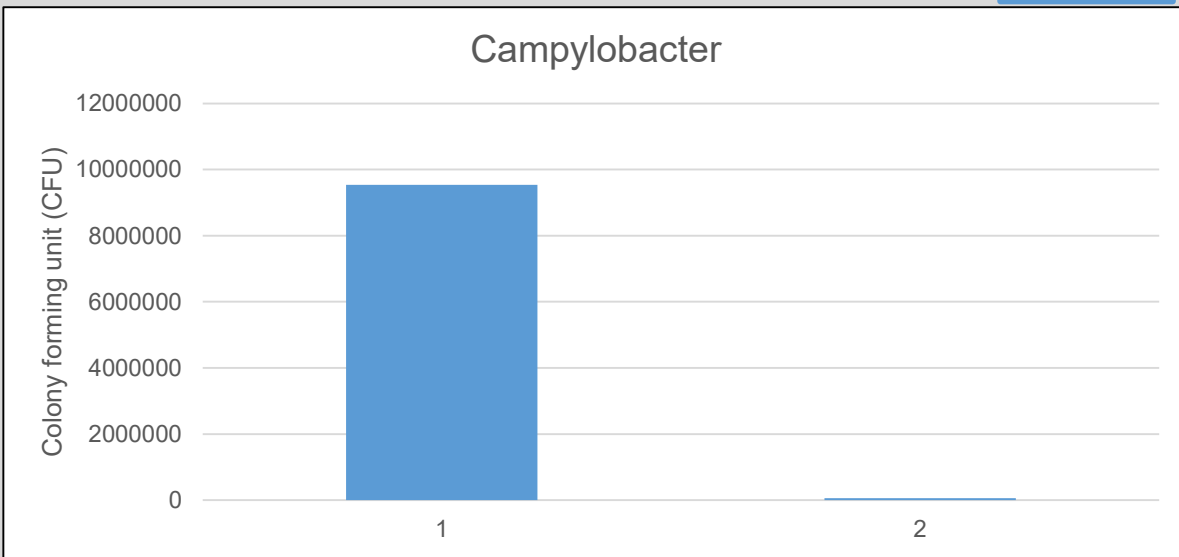


Fig 1 (ii): Prevalence of the respective microorganisms in chicken brand 1 and 2

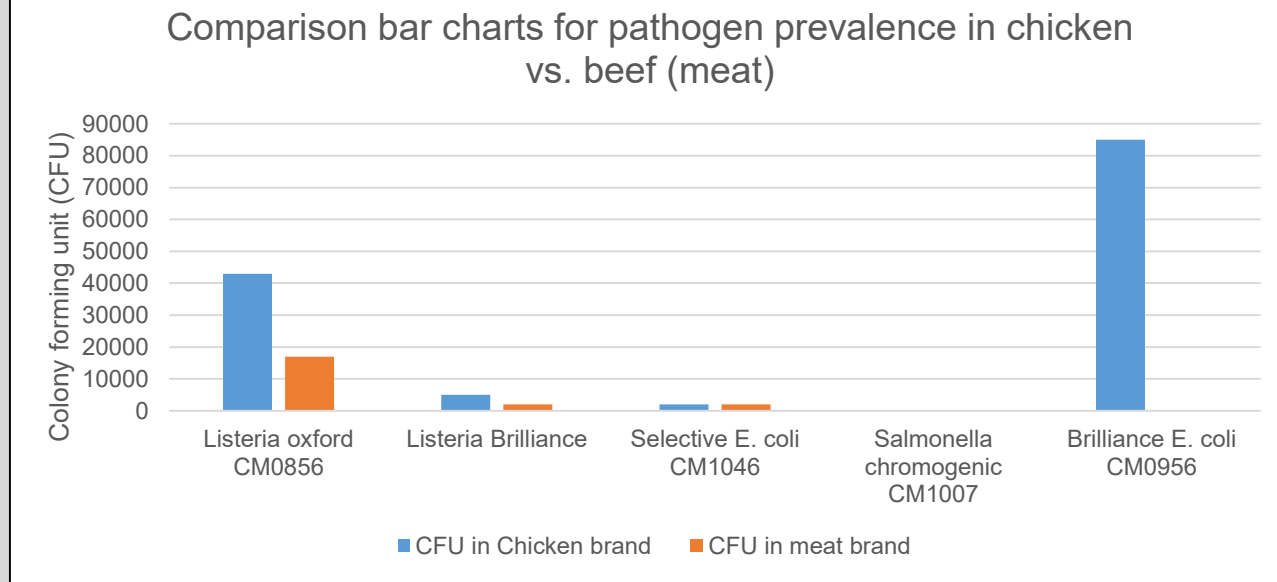


Fig 2 (i): Number of CFU for respective microorganisms in chicken vs. beef

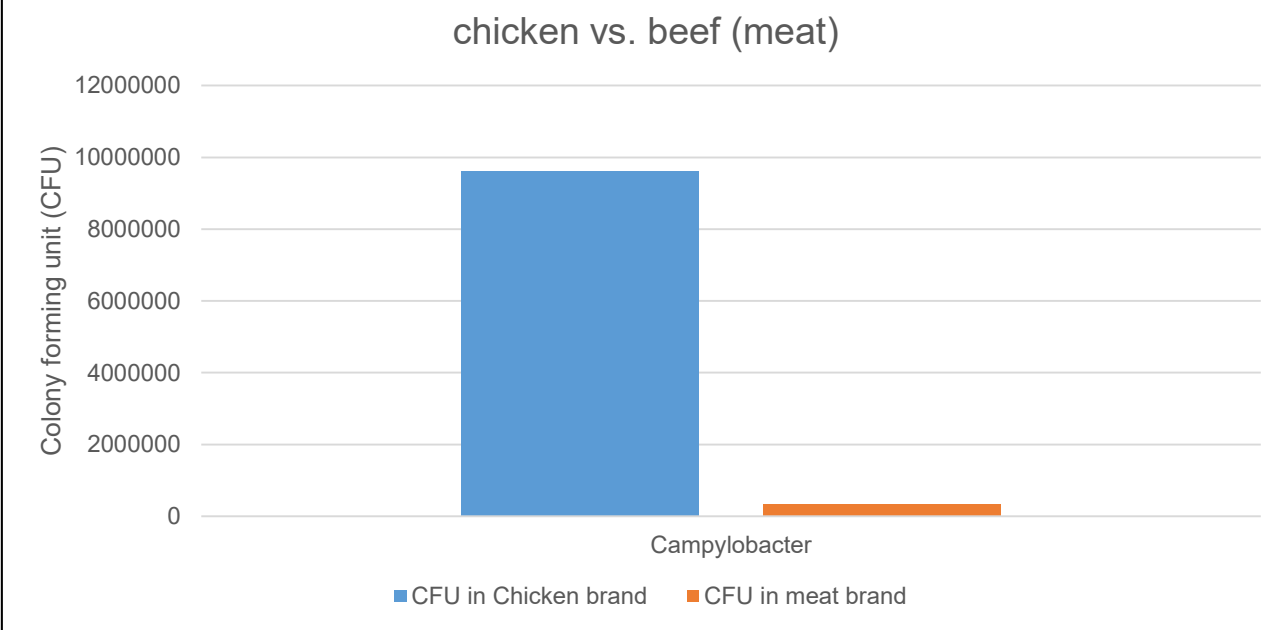


Fig 2 (ii): Number of CFU for respective microorganism in chicken vs. beef (meat)

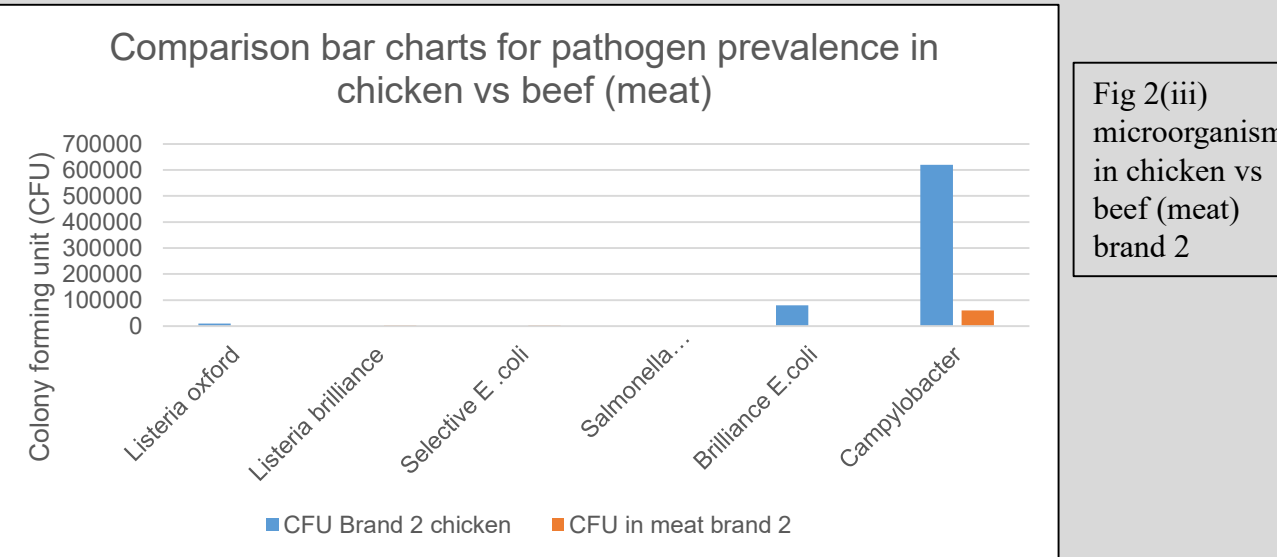


Fig 2(iii) microorganism in chicken vs beef (meat) brand 2

Discussion

- Even though the CFU was low the results were reliable because the control plates exceeded past 30 and below 300.
- Unlike chicken, beef harbours minimal to no bacteria on the agar plates which may suggest that beef is a safe alternative to chicken.
- Chicken meat from the two chosen brands is more susceptible to bacteria organism because they have more colony forming unit (CFU) compared to beef.

Conclusion

- There are currently no evidence that claims that raw feeding is responsible for transmitting pathogen causing clinical disease
- There are risks associated with every type of feeding where hygiene precautions is considered.
- Hygiene is important in RMBDs to encourage and promote awareness of the possible risks
- Human infection can occur via cross contamination
- Companion animals can transmit infection via direct contact

Reference

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