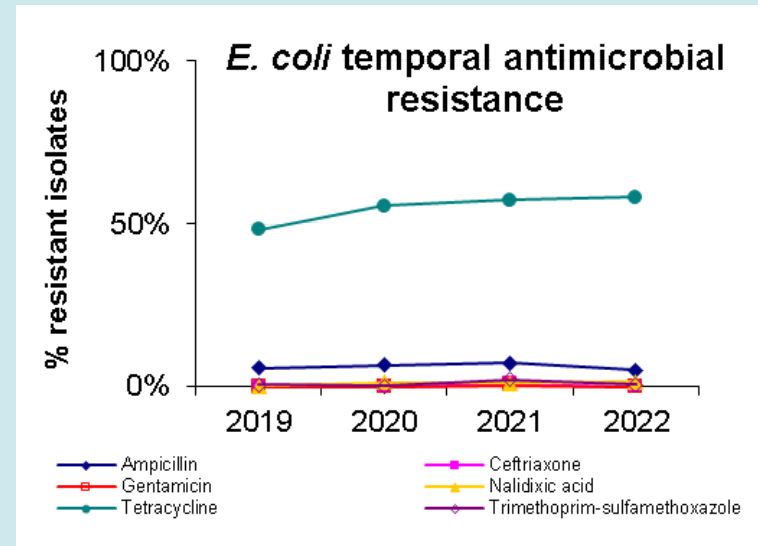# ENTERIC PATHOGEN ANTIMICROBIAL RESISTANCE (AMR) UPDATE - 2022

- Fecal samples were collected from finished feedlot cattle within 30 days of slaughter.
- AMR results from fecal *Escherichia coli* bacteria in 2022 were like 2021, where 40% of the isolates were susceptible to all antimicrobials tested, and ≤ 10% were resistant to ≥ 3 antimicrobials.
- *E. coli* resistance was most common to tetracycline (57%) and sulfasoxazole (18.5%).

E. coli temporal antimicrobial resistance

Legend: Ampicillin, Ceftriaxone, Gentamicin, Nalidixic acid, Tetracycline, Trimethoprim-sulfamethoxazole

E. COLI WERE NOT RESISTANT TO ANY ANTIMICROBIALS OF VERY HIGH IMPORTANCE TO PUBLIC HEALTH.

Salmonella serovar distribution

- Uganda — 33%
- Muenchen — 22%
- Typhimurium — 22%
- Infantis — 11%
- Mbandaka — 11%
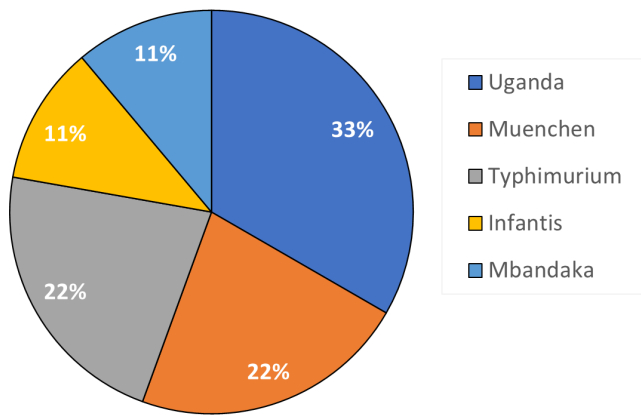
- From 2021 to 2022, *Salmonella* prevalence decreased from 4% to 3%, as did the number of serovars (8 to 5).
- *S. uganda* was the most common serovar, with the most resistance detected to tetracycline and sulfasoxazole.
- Two *S. typhimurium* isolates were resistant to 7 antimicrobials.
- Three of the 9 *Salmonella* isolates were susceptible to all antimicrobials tested.

SALMONELLA AMR DID NOT CHANGE SIGNFICANTLY FROM 2021 TO 2022.

- *Campylobacter* were isolated in 59% of fecal samples; 21% of the isolates were *C. jejuni* and 79% were *C. coli*.
- AMR resistance was common to tetracycline.
- Resistance to ciprofloxacin, an antimicrobial of very high importance in human medicine, increased significantly from 2021 (29%) to 2022 (42%).

Percent of samples positive for Campylobacter spp.
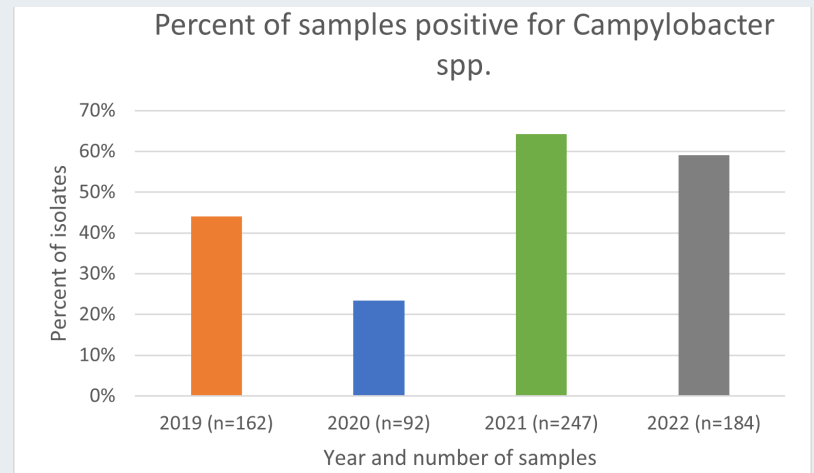
ADDITIONAL RESEARCH IS NEEDED TO UNDERSTAND INCREASES IN CIPROFLOXACIN RESISTANCE IN CAMPYLOBACTER.

- Various enterococci bacterial species were isolated in feces.
- Resistance to lincomycin was most common, followed by tetracycline, tylosin, and erythromycin.
- Lincomycin and erythromycin are antimicrobials not currently used in feedlots in Canada.
- Research is ongoing to understand how resistance develops and spreads in bacteria in the absence of specific antimicrobial use.

LEARN MORE ABOUT AMU/AMR IN CANADIAN FEEDLOT CATTLE ON OUR WEBSITE.

QUESTIONS? EMAIL US!

INFO@CFAASP.CA

SCAN CODE OR CLICK ON LINK TO VISIT US:

CANADIAN FEEDLOT ANTIMICROBIAL USE AND ANTIMICROBIAL RESISTANCE SURVEILLANCE PROGRAM (CFAASP)