

Surveillance of foodborne pathogen, Shiga-toxin producing *E.coli* in wild Bison



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INTRODUCTION

Introduced Bison at Nachusa Grasslands can be reservoirs of pathogenic Shiga-toxin producing *E. coli* (STEC) which can transmit to humans and cause bloody diarrhea. STEC is various adherence factors which can colonize novel reservoirs in the environment through various routes shown in Figure 1.

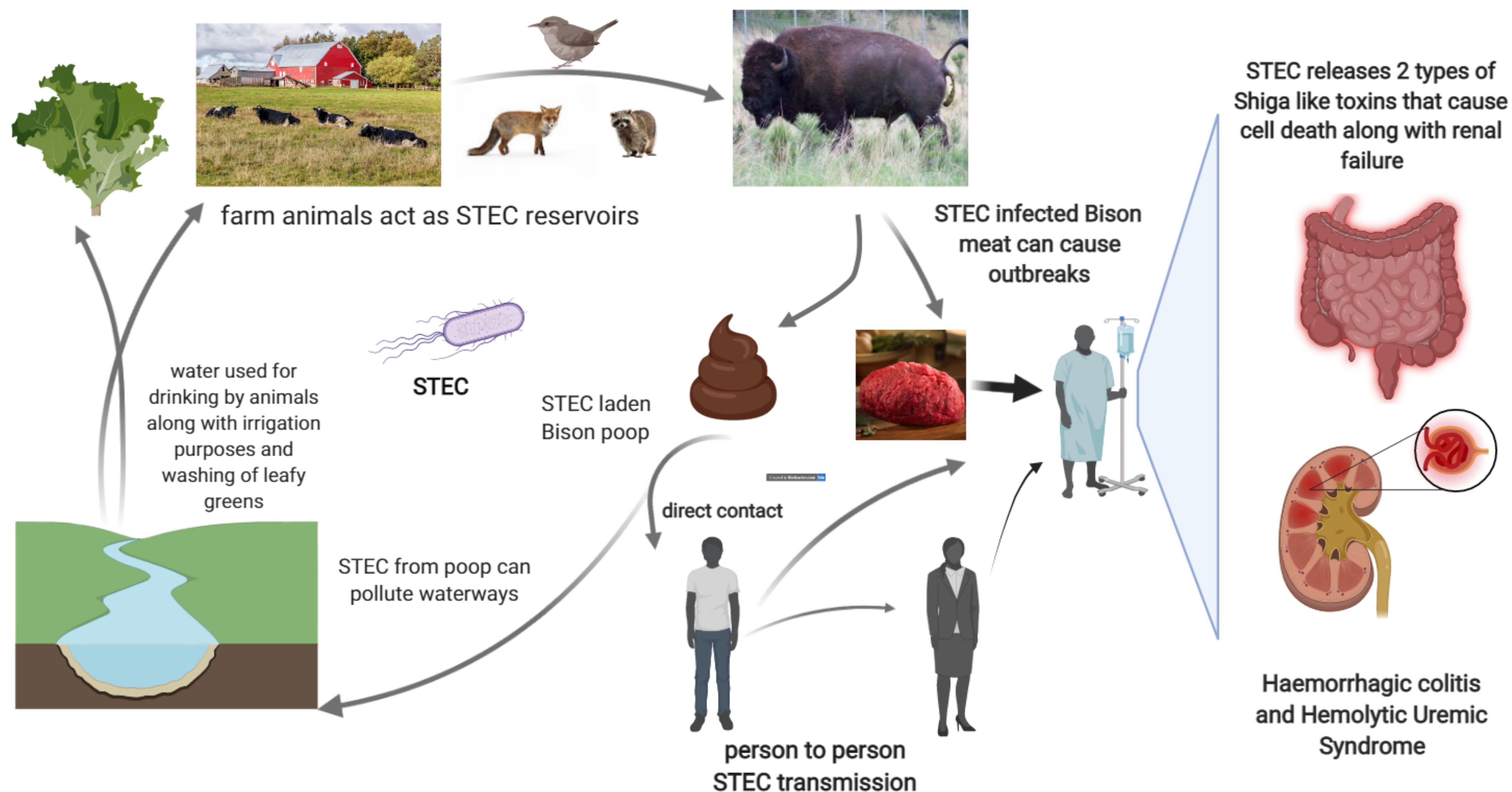


Figure 1. STEC can spread in the environment through various zoonotic sources to Bison leading to human infection and disease

Aim

This research aims to perform molecular detection of STEC using pathogen specific primers through PCR on microbial DNA isolated from Bison fecal matter.

METHODS

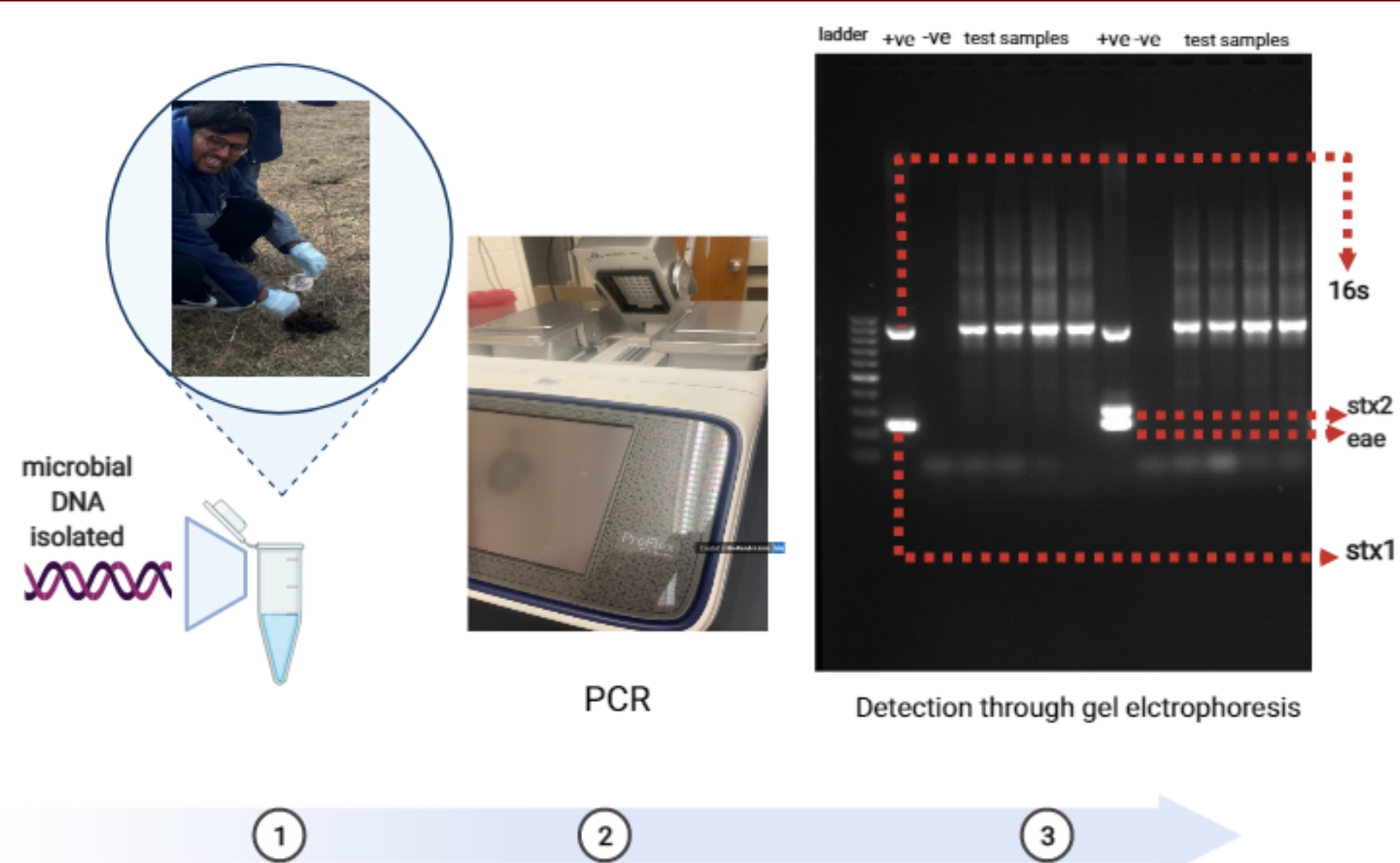


Figure 2. Microbial DNA is extracted from aseptically collected fecal samples and PCR is conducted followed by Gel electrophoresis.

RESULTS

PCR conducted on 75 samples collected in 2020 were negative for genes expressed by STEC.

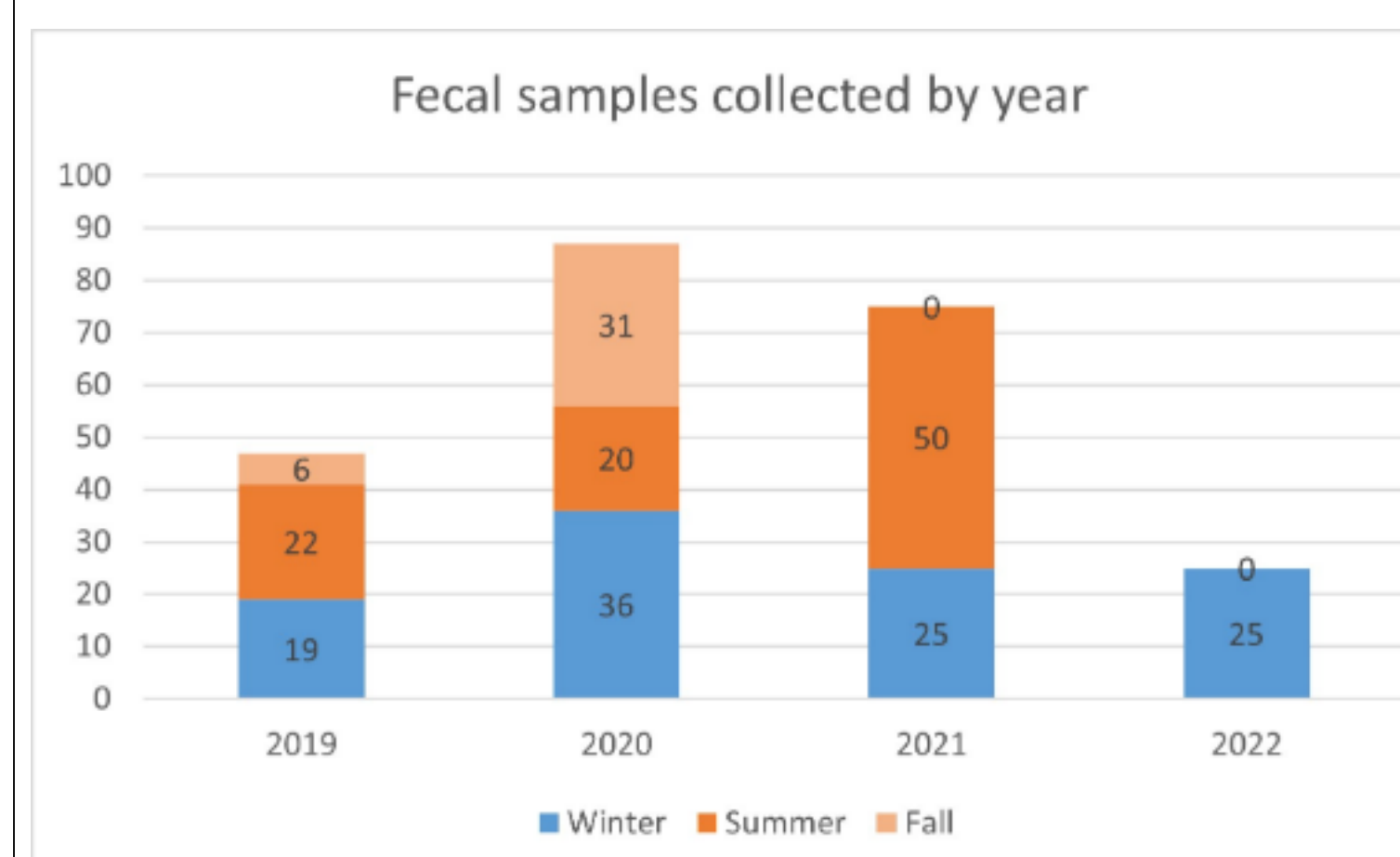


Figure 3. Fecal samples collected from 2019-2022 per season.

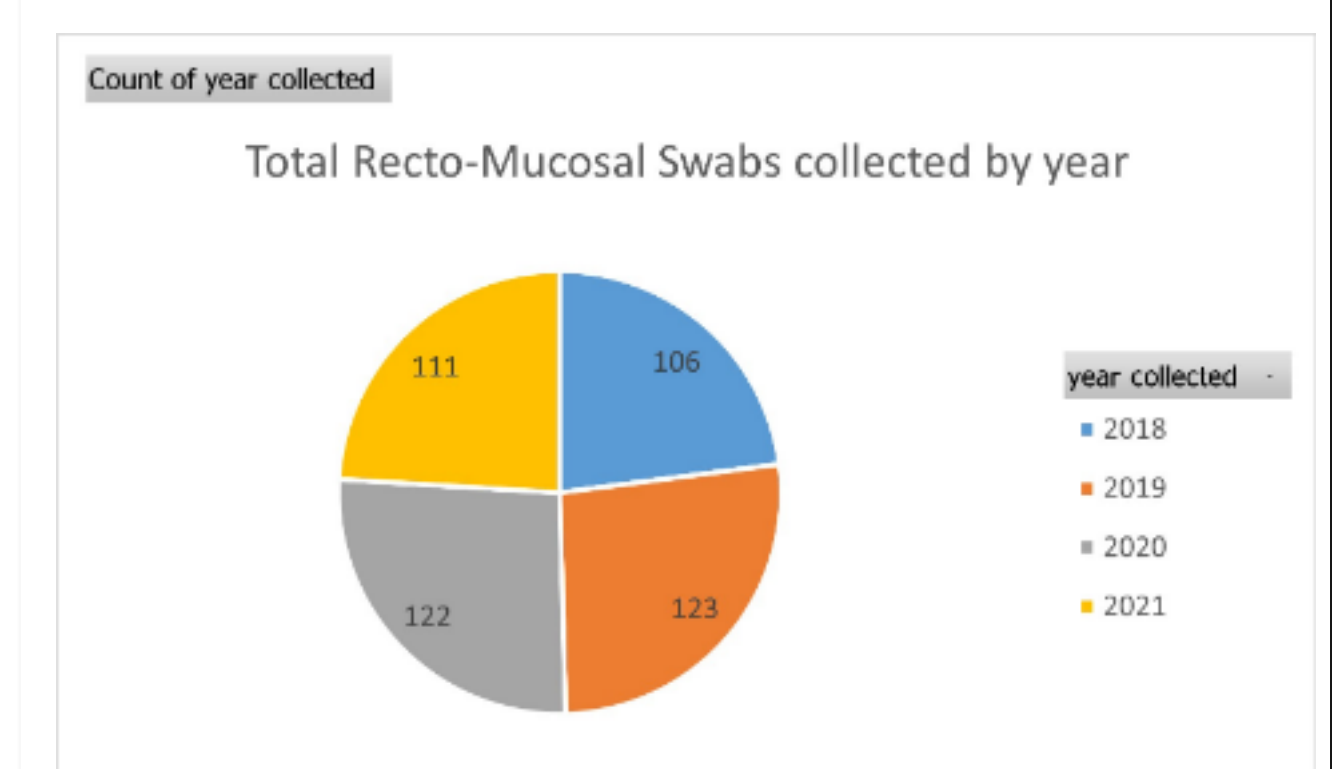


Figure 4. Recto-Mucosal Swab samples collected during fall Roundup 2018-2021.

FUTURE DIRECTIONS

- Conducting PCR on fecal samples collected through different seasons after 2020.
- Fecal microbiota comparison with commercially farmed Bison.

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