

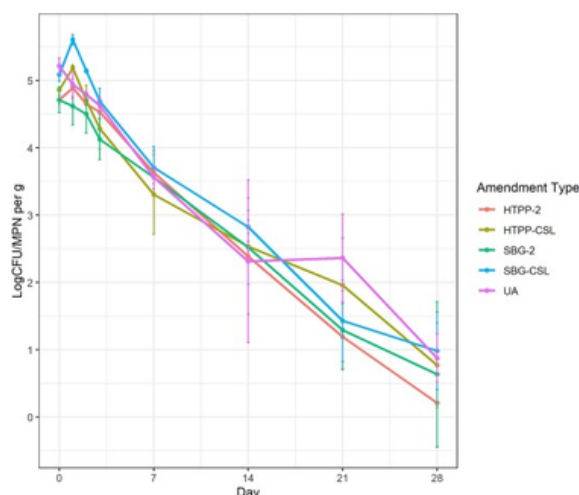


# RESEARCH SUMMARIES

## BIOLOGICAL SOIL AMENDMENTS CAN SUPPORT SURVIVAL OF PATHOGENIC AND NON-PATHOGENIC *ESCHERICHIA COLI* IN SOILS AND SPORADIC TRANSFER TO ROMAINE LETTUCE

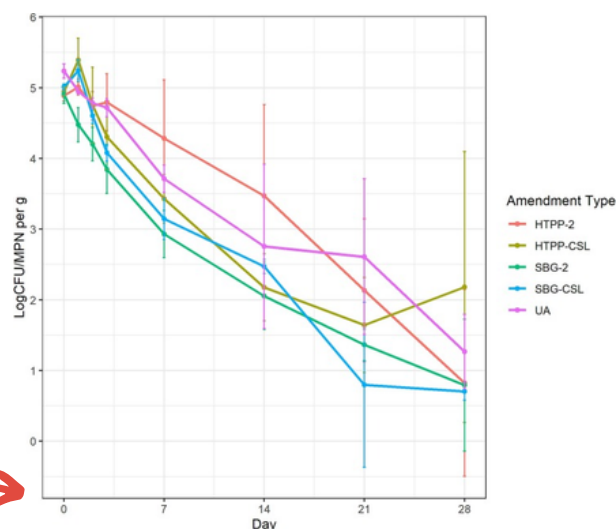
- Soils were side-dressed with BSAs to grow Romaine lettuce in environmental chambers.
- Some treated BSAs facilitated a rapid decline of *E. coli* O157:H7 in soils.
- Treated BSAs supported but did not enhance survival of *E. coli* in soils.
- Transfer of *E. coli* from soils to lettuce was low and sporadic.

Die-off Curves of *E. coli* TVS 353 Strains



For *E. coli* TVS 353, unamended soils took the longest number of days to achieve a 3-log reduction in soils ( $T_{3L}$ ) with a value of 20.29 days, while soil side-dressed twice with heat-treated poultry pellets (HTPP-2) supported the shortest  $T_{3L}$  of 17.39 days.

Die-off Curves of *E. coli* O157:H7 REP Strains



For *E. coli* O157:H7, unamended soils, again, had the highest  $T_{3L}$  with a value of 22.47 days, while soil side-dressed with HTPP first and corn steep liquor second supported the shortest  $T_{3L}$  of 13.53 days.



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**MORE  
INFORMATION**

Xiong, Z.R., Gabriel, E., Gutierrez, A., East, C., Kniel, K.E., Danyluk, M.D., Jay-Russell, M., Sharma, M., 2025. Biological soil amendments can support survival of pathogenic and non-pathogenic *Escherichia coli* in soils and sporadic transfer to Romaine lettuce. *Int. J. Food Microbiol.*, 434, 111147.  
<https://doi.org/10.1016/j.ijfoodmicro.2025.111147>

