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Dynamics of *E. coli* O157:H7 Persistence and Migration on Baby Spinach

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Increasingly, fresh and minimally processed vegetables and fruit are being implicated as vectors for gastrointestinal disease in human consumers. There are various points on the field to fork continuum at which bacterial contamination can occur, many of which currently are under intensive study. However, little is known of the behavior of bacterial pathogens once contact is made with plant tissue. The survival and migration dynamics of two toxin-negative variants of *E. coli* O157:H7 (strains NCTC 12900 & DM4) on packaged retail-level baby spinach was examined in order to expand this information base. Changes in the counts of *E. coli* deliberately introduced to the upper surface of individual leaves were monitored during their subsequent storage at 6° C in the dark. In addition, the capacity of contaminated leaves to serve as a source of contamination (donor of *E. coli*) to other spinach leaves held in close proximity with them was assessed. By varying the moisture in the containers as well as the strain of *E. coli*, the effects of both ambient moisture (Rh) and bacterial flagella on survival and cross contamination rates were examined. Both *E. coli* strains survived in a culturable and transferable condition on the donor leaves for up to 12 days, regardless of moisture content or the presence of a defective flagella-coding gene.

Luke Taylor graduated from Rothesay Netherwood School, Rothesay New Brunswick in 2006. Luke is currently completing his Honours thesis and Bachelors of Science in Biology in his fifth year at Acadia. Aside from graduating with Honours, Luke will also graduate with a Cooperative Education certificate that he has earned by completing three paid work placements. His placements have included two terms at Agriculture Canada (Kentville Research Station), as well as one with Watershed Technologies as a wildlife biologist. Luke has greatly enjoyed his time at Acadia University and has filled his free time by hiking and camping in the outdoors and also volunteering with Sensory Motor Instructional Leadership Experience (S.M.I.L.E.), Acadia Active Aging (AAA), Hants

Community Hospital, as well as with the Wolfville Volunteer Fire Department. After his final year at Acadia, Luke hopes to begin a masters in public health at Memorial University.