



Research Priority Areas Summary

Five research priorities were identified for funding by the voluntary Fresh Express Scientific Advisory Panel. Each research project was expected to address one or more of these priorities. Of the 65 proposals received, nine research projects were selected independently by the Fresh Express Scientific Advisory Panel, totaling \$2 million dollars. The research priorities are:

1. Determine the potential for the internalization of *Escherichia coli* O157:H7 into lettuce and/or tissue spinach during the growth of plants and their subsequent harvesting, cooling, processing and transport/distribution. This work should include the consideration of factors affecting internalization as a function of plant varieties, plant age, growing conditions, plant variety, growing season, method of harvest, etc;
2. Identify new mitigation strategies and technologies or significant improvements in existing technologies for improved intervention to reduce the levels/frequency of *E. coli* O157:H7 and other enteric pathogens both on and in fresh leafy green produce;
3. Conduct field studies to identify sources and vectors/vehicles for *E. coli* O157:H7 in the environment and factors that affect the degree and extent of contamination into the produce (particularly lettuce and spinach) field or processing locations. These studies should consider some or all of the following factors on the risk of contamination of ground-grown leafy green produce: the impact of production field flooding, water source (well, irrigation source) and method of water distribution (furrow, sprinkler or drip irrigation), the role of wild animals present in the fields and the presence of cattle and other agricultural animals in locations near production fields;
4. Determine the ability of *E. coli* O157:H7 to multiply in the presence of normal background flora during transportation from harvest field to the cooler, while at the cooler, and during transportation either as finished packaged salads or cored product in a low oxygen, high carbon dioxide atmosphere, or in open 20 pound returnable plastic totes in temperature regimes commonly used, as well as, temperatures considered abusive; and
5. Determine the ability of *E. coli* O157:H7 and other enteric pathogens to survive composting processes, including those for "green compost" and leafy green field waste and potential for multiplication of the surviving pathogens in composted materials in the fields under optimal conditions.