Sanitation Survey:

Study of Reusable Dine-In, Reusable To-Go and Disposable Single-Use Foodservice Items

Executive Summary
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INTRODUCTION

Foodservice packaging items, like paper and plastic cups, plates and bowls, were invented over 100 years ago to provide a more sanitary alternative to their reusable counterparts and help protect public health. Over the years, the Foodservice Packaging Institute has commissioned independent studies with third-party laboratories to compare the sanitary quality of single-use foodservice packaging and reusable options. The last study was conducted in 2012 in Sacramento County, California.

Since 2012, reuse models for takeout and delivery have emerged and gained interest as sustainability measures and reporting, along with the impact of disposable items on the environment and potential cost-savings of reducing use of disposable items, became more highly scrutinized. The objective of this study was to conduct a survey of reusable takeout and delivery items, single-use items and dine-in reusable foodservice items to determine the sanitary quality of these items in foodservice establishments in North America.

METHODOLOGY

In November 2022, four different foodservice establishments in North Carolina were each surveyed on three separate days. In each establishment, five durable (returnable), five reusable and five single-use items were sampled for a study sample size of 240 items. Samples included forks, knives, spoons, cups, containers, plates and bowls.

One sterile transport swab containing a medium to prevent die off of microorganisms was used to sample each foodservice item. The swab was rubbed slowly and thoroughly over the entire food contact surface area and then shipped in ice to Silliker Food Science Center (FSC) for testing.

Once all swabs were received in satisfactory condition, each swab was transferred to a buffer solution and homogenized. Serial dilutions were prepared and analyzed by aerobic plate count, Staphylococcus plate count and coliform plate count technique. All bacterial counts were converted into logarithms for data analysis. If $p>0.05$, no statistically significant difference was detected.

RESULTS

There were no differences observed in Coliform counts and there were no significant differences ($p>0.05$) between reusable dine-in and disposable items. Aerobic plate count results were significantly higher ($p<0.05$) for reusable to-go durable items compared to reusable dine-in and single-use items. While the quantified levels were very low, Staphylococcus counts were lower ($p<0.05$) in the reusable to-go items compared to reusable dine-in and single-use items.

CONCLUSION

Overall, reusable to-go durable foodservice items had higher aerobic plate count microbiological levels than reusable dine-in and single-use items. Previous studies in different parts of the country have shown different results where reusable items had higher microbiological counts than single-use items. Differences could be attributed to any number of factors, including handling by foodservice employees or changes in dishwashing technology.