

## **The Ultimate Solution to Food Safety: Data-rich Programs *and* Analytics**

Food safety history has been a complex search for answers to questions about how food can be more safely grown and handled. This is especially true of fresh produce. While prevention is the industry goal, absolute prevention is unrealistic, since so much fresh produce is consumed raw without kill steps that other foods undergo. Instead of prevention, risk mitigation is a more practical objective. As in any history, certain food safety solutions are in vogue at certain times until new and varied answers emerge. Eventually, prescribed systems must give way to more integrated approaches.

Like food safety solutions, consumer preferences and concerns also wax and wane, as demand for certain types of foods, produced in certain ways, come and go as do other popular trends. But these consumer preferences add additional challenges to the safe production of produce. In order to address these challenges, rather than focusing on a single solution, efficacious food safety programs must be multifaceted, integrated, and holistic in their approach.

After audits were developed in the 1990s, they unfortunately became a panacea for some people in the industry. Audits provided a reference point for suppliers upon which they could act to mitigate risk, while buyers confirmed their actions. Audits continue to undergo improvements, informed by both science and research, but audits are still ultimately snapshots in time, and at their best, they serve to identify questionable food safety practices, not simply to provide avenues to certification.

Some have pointed to laboratory testing as the alternative. Testing too has evolved over time, and remarkable improvements in the specificity and sensitivity of laboratory methods, and the quality of laboratory instruments have made both microbiological and pesticide residue analyses more effective. Environmental monitoring programs, along with field and finished product testing, have become more commonplace. But lab tests, like audits, are not the cure-all that some claim them to be, especially if corners are cut in testing methodologies, sampling processes, etc. Other strategies, like sanitation programs and consultation, have also spent their time in the spotlight as the next best answer to mitigating risk.

Ultimately, no single approach, by itself, is the remedy for reducing risk. Instead, data-rich supply chain programs, such as Azzule's SCP and Premium SCP rely on as much information as possible – 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> party audits, pesticide residue and microbiological testing results, sanitation programs, the implementation of consultative strategies, etc. – and manage it in a dynamic, virtually real-time format, allowing it to flow seamlessly throughout the supply chain. Supply chain programs transparently inform all of the entities throughout the chain of all food safety efforts, while incentivizing risk mitigation and helping suppliers to market their products.

The next step is to subject those efforts to the kind of analytical scrutiny that can predict risk. Analytics can take whatever form suppliers deem appropriate. For example, let's focus on just auditing momentarily: the graph above depicts the ten most common non-conformances on the PrimusGFS audit and how watermelon suppliers nationwide compare to other commodity producers nationwide.

Food safety succeeds with a the-whole-is-greater-than-the-sum-of-its-parts approach – dynamic data coupled with predictive analytics, providing an integrated, holistic solution to food safety that builds on all of the successes of the past to offer producers the best chance at reducing risk.