

Potential Sample Skewing from Improper Sampling Technique

Any number of things can affect or skew sample results for pathogens and indicator organisms. Below is a list of items that could potentially skew sample results. It is not an all-inclusive list.

Improper Sampling Techniques

1. Lack of aseptic sampling. This can potentially elevate counts.
2. Using outdated or turbid sterile sampling solutions such as Butterfield's phosphate diluent (BPD) or buffered peptone water (BPW).
3. Not storing sterile sampling solutions according to the manufacturer's recommendations.
4. Freezing samples will tend to decrease bacterial counts.
5. Applying additional interventions to products to be sampled or increasing concentrations of antimicrobial interventions beyond what is used in the normal process does not "randomly" sample product, as it is not indicative of the actual process.
6. Improper storage of samples. Samples should be held under refrigeration until shipped to the lab. Samples should be shipped to the lab cold with frozen gel packs in insulated containers.
7. Delayed time to ship samples to the lab. Samples should be held under refrigeration and shipped so as to arrive at the laboratory and be analyzed no later than the day after it is collected. If this is not possible, the carcass or product should be refrigerated until the process can be accomplished in the appropriate span of time.
8. Not allowing adequate drip time after microbial interventions are applied. Immediate sample collection will include a significant amount of residual antimicrobial, which can and will make it harder for the laboratory to detect live bacteria. FSIS generally recommends establishments wait at least 60 seconds after application of antimicrobial interventions before collecting a sample to reduce the amount of antimicrobial carryover. Allowing more than 60 seconds of drip time will further reduce antimicrobial carryover. Tipping over the carcass to allow drainage of chiller water that has accumulated in the body cavity should also result in greater accuracy of the test result.
9. Compositing pre-chill samples without adequate support that minimal variation exists within its pre-chill process.
10. Compositing pre-chill and post-chill samples. Pre-chill samples show how well an establishment is minimizing contamination on live birds coming to slaughter and on carcasses throughout the evisceration and dressing process. Post-chill samples show how well an establishment is minimizing contamination during chilling and the overall effectiveness of any antimicrobial interventions the establishment has chosen to apply throughout its process. Compositing pre-chill and post-chill samples would decrease the value of the sample results since each sample type is evaluating a different part of the process.