Forms to Help Identify Relevant Supporting Documentation Materials

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The following forms were designed to help processors identify their product characteristics and processing details that are important to compare to the research methods. These forms would also be helpful when discussing articles with inspection personnel. You would need a separate copy of these tables for each article that you are considering to use.

Form #1, below, was developed for raw products. Form #2, below, was developed for cooked products. And Form #3, below, was developed for the slaughter process. Regardless of which form you use, identify the parameters that apply to your process and fill in the boxes with the information that applies to your product/processes and that of the article that you are evaluating.

The first items in the first column of Table 1 are related to your product characteristics. As mentioned earlier, not all of these may apply to your product or be important to the safety of your product. And you may think of others that need to be added to the table. Under "Pathogen of Concern," you would select one (or more?) of these pathogens that are relevant to your product and were studied in the article that you are considering.

Form 1. Evaluating the Relevance of Raw Product Publications

Product/Process Parameters	Your Product Characteristics	Research Product Characteristics
Meat species (beef, pork, chicken, etc.)		
pH		
Product dimensions or weight		
Pathogen of concern		
Fresh pork: Salmonella		
Fresh chicken: Salmonella		
Fresh beef: *E.coli* O157:H7		
Process step of concern/CCP		
Nature of biological hazard		
contamination		
growth		
survival		
Internal Temperature (Storage)		
Internal Temperature (Processing)		
Regulatory guideline for process		
Actual results (Log reduction, etc)		
Calculated results (Pathogen Modeling Program, AMI Lethality Equation, U. WI Validation Center)		

Form 2. Evaluating the Relevance of Cooked Meat Product Publications

Product/Process Parameters	Your Product Characteristics	Research Product Characteristics
Meat species (beef, pork, chicken, etc.)		
% salt		
% nitrite		
pH		
Water activity (a_w)		
Product dimensions or weight		
Pathogen of concern		
Cooked products: *L. monocytogenes*		
Cooked products: *C. perfringens*		
Dry products: Salmonella		
Process step of concern/CCP		
Nature of biological hazard		
contamination		
growth		
survival		
Final Internal Temperature		
Cooling rate		
130-80ºF		
80-45ºF		
Regulatory guideline for process		
Actual results (Log reduction, etc)		
Calculated results (Pathogen Modeling Program, AMI Lethality Equation, U. WI Validation Center)		

Form 3. Evaluating the Relevance of Slaughter Process Publications

Product/Process Parameters	Your Product Characteristics	Research Product Characteristics
Species (beef, pork, chicken, etc.)		
Pathogen(s) of concern		
Pork Carcasses: Salmonella		
Poultry Carcasses: Salmonella and Campylobacter		
Beef Carcasses: *E.coli* O157:H7		
Process step of concern/CCP		
Type of Intervention		
Hot water only		
Warm water before antimicrobial rinse		
Antimicrobial rinse (Acids, other?)		
Other		
Water temperature		
Antimicrobial agent & concentration		
Rinse time/carcass		
Rinse pressure		
Volume of antimicrobial agent used/carcass		
Nozzle distance from carcass		
Impact of Intervention		
Actual results (Log reduction, etc)		
Calculated results (Pathogen Modeling Program, AMI Lethality Equation, U. WI Validation Center)		

The "Process step of concern/CCP" refers to the point or step in your process that you have identified as a critical control point (CCP) (e.g., grinding, packaging, cooking, etc.). The "Nature of biological concern" is asking only for a check mark in the proper box that indicates whether you are most concerned with pathogen contamination (from the environment, etc.), pathogen growth (during storage or processing times), and survival (during cooking, drying, etc.).

The "Final internal temperature" could apply to endpoint cooking temperatures, as well as critical limits for fresh product. The cooling rate refers to the time limit targets used for each of two temperature limits. You (or the article) may use a different combination of times and temperatures than those given.

The details that you enter into this table should make it more obvious if the important parameters of the article match what you are doing. Also, this information will make it easier for you to justify to inspection personnel why an article is relevant or for inspection personnel to explain to you why they disagree with the articles relevance.

Examples of the regulatory guideline row would include: 6.5 log reduction of Salmonella during cooking, 1 log growth or less of *C. perfringens* during chilling, etc.

The final two rows provide spaces for entering the results published in the article and calculated from various models and equations. At this point, you are not likely to have actual pathogen data for your product.

Form 4. Evaluating the Relevance of Fermented and Dried Process Publications

Product/Process Parameters	Your Product Characteristics	Research Product Characteristics
Meat species (beef, pork, chicken, etc.)		
% salt		
% nitrite		
pH target		
Water activity (a_w) target		
Product dimensions		
Fermentation temp & humidity		
Drying temperature & humidity		
Pathogen of concern		
L. monocytogenes		
S. aureus		
Salmonella		
Process step(s) of concern/CCP		
Regulatory guideline for process		
Actual results (Log reduction, etc)		
Calculated results (Combase, Degree hours, U. WI Shelf Stability Predictor)		