

Hot Food, Happy Kids, & Healthy Bodies!

Every School Foodservice Operator's Dream

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Society beckons better school food service programs, better food quality....what should schools be demanding from their foodservice equipment?

As a nation, we have an obesity epidemic linked to years of poor diet. A poor diet has progressed into chronic and terminal disease. Worst yet, these problems have manifested in our Nation's youth. How do we cure this? Emphasis has been placed on school food service programs. New guidelines and regulations are prescribing a better diet for future generations. Partnerships have been developed with National and Federal organizations such as the School Nutrition Association, National Food Service Management Institute and USDA agencies to develop and distribute training materials to school districts across the country. Education is occurring everywhere, making school menus both nutritious and aesthetically attractive to children. But how nutritious is food if it is not safe to eat?

With the help of the Center for Disease Control and Prevention and the Food Safety Inspection Services, USDA agencies have developed guidelines, educational materials and training kits to address Food Safety concerns. With the help of local county and city health inspectors, school food service professionals have begun to understand the importance of safe food handling and safe food practices. Eric M. Bost undersecretary for Food, Nutrition and Consumer Services stated in a Washington USDA 2002 press release titled 'USDA Officials Focus on Food Safety for Nation's Children', "Providing nutritious and safe food for our child nutrition programs is critical. The meals served are designed to help children become healthier and more productive, which will give them the best possible start in life." He continued to state, "It is essential that those meals are not only well-balanced and appealing, but also safe to consume." All of this is good news for the parent and child but how about the school food service profes-

sional? More guidelines and more regulations suggest more work. With tight budgets, labor force, and many changes to be made, where does a food service operator start?

The most effective way to begin safe food handling is through implementation of a HACCP plan. HACCP (Hazard Analysis Critical Control Points) addresses food safety from inspection to prevention. As food enters a foodservice establishment it passes through a series of critical areas. Opportunity for contamination occurs as food flows through such areas as receiving, storage, preparation, cooking, holding, servicing, cooling and re-heating. It is a food service operator's obligation to identify these areas as critical control points and develop a plan to minimize risk of food contamination and food borne illness. Purchasing the safest food and equipment are among the first steps to address a HACCP plan; as well as two of the toughest challenges a school food service professional must take. Temperature is one of the most important and critical areas of a food's flow. Improper food temperature is the most frequent and preventable causes of food borne illness. It is critical to adhere to food safety guidelines when cooking, holding, retherming and serving these foods. It is also critical that food service professionals utilize systems that minimize the time food spends in the danger zone.

Certain foods don't just attract hungry customers! Some are naturally prone to rapid pathogen growth because of their composition. Protein type foods, such as meat, seafood, poultry, dairy, legumes and vegetables are a perfect host for food borne pathogens. The warm, moist, nearly neutral pH environment of protein foods is an ideal breeding ground for bacteria. In addition, proteins can only spend a cumulative total of four hours in the temperature danger zone before becoming a biological hazard. Safe Protein Management (SPM) precisely monitors the temperature during critical control points: cooking, holding, retherming and serving while maintaining compliance with USDA and FDA guidelines. Proteins are the cost center of most foodservice operations; therefore SPM is imperative in the

prevention of financial loss, lawsuits, and an operation's reputation. Investing in new equipment and technology can be costly at the onset but can minimize headaches and pocket holes in the future while providing healthy safe food.

It is important to understand there are different ways to thermalize food. Conventional cooking or holding equipment uses dry heat alone, often causing dry and overcooked products through excess evaporation. While this type of technology succeeds in holding within HACCP guidelines, it adversely affects food quality in such ways as changing the texture, color, taste, yield, and nutritional value. Systems using only dry air heat have very little tolerance for errors in cooking times. Other types of hot holding equipment emphasize the use of humidity in the cabinet, creating a very moist environment that makes it difficult to precisely control food temperature and execute crispy foods. The best equipment choice uses a dual heat system that specifically controls food temperature and

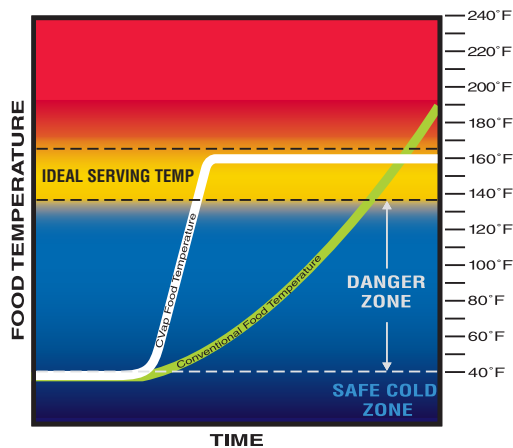


Figure A

food texture independently to assure food quality. This kind of technology utilizes vapor (or latent) heat and air heat to control the rate of moisture evaporation. Vapor heat is a faster, more efficient form of energy heat transfer. (see Figure A)

How does this work? One must understand that food is comprised of water. When heat is applied to food it behaves the same as heat applied to water. Water has a vapor pressure. When two water or wet bodies are enclosed together their properties will become the same. This occurs through evaporative cooling. Dual heat systems use a water reservoir or evaporator as a water body. The evaporator is heated

inside the cabinet chamber to control the food's rate of evaporation and internal temperature. Such precision allows the operator to cook foods to a specific doneness and hold it at the "just-cooked" quality for extended periods of time without a loss of moisture. (See figure B) Such systems have air heaters that are controlled independently from the evaporator. These heaters can be controlled to elevate the air temperature



Figure B

above the food or water temperature. As the air temperature increases, food moisture begins to evaporate and the food becomes crisper. Technology using vapor heat enables precise control of relative humidity (RH) set to the standards of HACCP guidelines.

Dual heat systems also utilize microprocessor-driven controls allowing for independent control of food temperature and food texture. This type of control in foodservice equipment needs no calibration and allows for precision, quicker cabinet response and recovery time. Cabinet controls should offer the operator the ability to input food temperature, food texture, and cook time or the use of pre-programmed buttons for a menu's most popular food items. Temperature control can also be reassured through the use of a temperature probe. Equipment design engineers have developed controls to monitor and record safe protein management measured by a probe inserted into a protein. Equipment is available with HACCP-ready software, using NAFEM Data Protocol (NDP) to monitor compliance with HACCP guidelines.

An operation using cooking, holding, retherming, and serving equipment with a controlled vapor or dual heat system and safe protein management will have a positive impact on its food production. Food service

professionals that apply these systems will improve food quality and in turn improve profits, student participation and the health of students and staff. Equipment manufacturers will continue to develop and change product designs to fit the needs of the foodservice industry. Equipment will evolve as school food service programs evolve to meet nutrition and food safety requirements. As the demands of your school food service program increase, take care in procuring the right piece of equipment which offers food at a “just-cooked” quality and control through the cooking process. Get Hot Food, Happy Kids & Healthy Bodies!

School food service equipment check list:

- Cooks to a desired doneness
- Recognizes the minimum food temperatures and HACCP guidelines for holding
- Offers a safe environment
- Offers sequential processing of foods (foods thawed ~ roasted ~ held in one piece of equipment)
- Increase in nutrient quality of food supply through uniform cooking and minimal yield loss
- Increase in succulence by way of controlling and eliminating excess evaporation
- Minimize energy usage
- Minimize labor costs
- Offer flexibility to expand or downsize menu selections with a variety of moist and crisp foods.

About Jill Conklin

Jill has an education background of Applied Science in Culinary Arts, Nutrition and Food Science. She has over eight years of experience in the restaurant industry, including six years as an executive Chef specializing in the development of authentic and historical cuisine. Jill has worked with Kid’s First and Team Nutrition, conducting cooking classes for parent/teacher organizations, children, and young adults in the K-12 school system. During 2004, she continued her efforts in the National Food Safe Schools Campaign offering instruction on Food Safety implementation for Food service professionals and the school body.

Miss Conklin has received recognition from National organizations such as the James Beard House, American Culinary Federation, IACP, Women Chef’s & Restaurateurs, Food Network and PBS Culinary programs.

Jill Conklin is Winston Industries VP of National School Accounts and working to develop national educational programs for the company.

Winston Industries takes pride in manufacturing equipment that addresses Food Safety Concerns and offers Safe Protein Management in compliance with USDA & FDA requirements.

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