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FLORIDA 4-H TAILGATE SERIES

Cooking Safety

Introduction

Childhood obesity is a serious public health problem in the US. Today, nearly a third of American children are overweight or obese (CDC, 2015). A contributing factor to childhood obesity is general dependency on prepared food, which is somewhat fueled by our society's dwindling cooking abilities. Many parents do not have the time, or they do not know how to cook, so they have not passed the skill on to the younger generation. The average American knows little about the safe preparation of highly palatable animal protein entrées. Additionally, nutrition research suggests that animal protein in the diet is beneficial to adolescent development (Cleghorn, 2007).

The Florida 4-H Poultry BBQ program has existed for years, and the program for red meat cookery has been a huge success in Tennessee 4-H. With sponsorship for the winners at the state level, the Florida 4-H Tailgate Contest program will be a success in Florida as well. This program will strive to promote enjoyable outdoor cooking experiences, encourage the incorporation of animal protein in the diet in order to combat childhood obesity, improve youth nutritional knowledge and cooking skills, and impart knowledge about safe handling and proper degree of doneness to produce safe and delicious meat dishes.

Learning Activity: Safety While Grilling

Learning Objective: Youth will learn about fire, food, and personal safety while grilling.

Life Skill: Healthy Lifestyle Choices

Background

You must use good safety practices to prevent injury, property damage, and foodborne illness while preparing food for a tailgate event.

Safety hazards and considerations can be placed into the categories of location, fire safety, and food safety.

Location safety: Secure your grill on a firm and level surface to prevent the grill from tipping over. Your grill should be away from wood siding, shrubs, and any other material that can burn. Keep young children, pets, and flammable materials away from your cooking. Do not place portable grills on tabletops that can burn. Never grill indoors, inside garages, or in other poorly ventilated areas. Charcoal briquettes produce carbon monoxide and can cause illness or even death. Remember that utensils, grill tops, and sides are very hot, so long handled utensils and protective mitts should be used to prevent injury. Loose clothing and open-toed shoes should not be worn.

Fire safety: Only use an approved charcoal chimney starter—never use gasoline or kerosene to start the fire, and never put lighter fluid on a fire. Do not use aerosol cans around fires because many aerosol propellants are flammable. Never leave your hot grill unattended. Flareups in the grill and grease fires are also potential hazards. A sprinkle water bottle can usually control flare-ups. Coarse salt or baking soda can smother a grease fire. A fire extinguisher that is capable of controlling wood, paper, and grease fires is also an important piece of equipment to have. After cooking, either douse the hot coals with water or close the vents on the grill to smother the fire. Make sure the coals are cold before disposing of them.

Food safety: Significant pathogens of concern include *Salmonella*, *E. coli* O157:H7 and other shiga toxin-causing *E. coli* for beef products, *Salmonella* for pork products, and *Salmonella* and *Campylobacter* for poultry (FDA, 2012). Shrimp have been associated with a number of pathogenic agents, but *Salmonella* and *Listeria*

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monocytogenes are the most common (Norhana et al., 2009).

The interior muscle is naïve to any pathogens which can cause foodborne illness. However, pathogens such as *Salmonella* and *E. coli* O157:H7 can live within the digestive tract of food animals and be transferred to the surface of the carcass during slaughter (Gill, 1979). Also, some pathogenic *Salmonella* can be harbored within the lymph glands of cattle and hogs (Arthur et al., 2008). Therefore, all ground meat must be cooked to 160°F and checked by a properly calibrated cooking thermometer in the thickest part of the patty.

The inside of an intact whole-muscle cut of meat, such as beef and pork steaks, chops, and roasts are safe when cooked to 145°F because the inside has not been exposed to pathogens and the surface will have reached 160°F to kill surface bacteria. All seafood products should be cooked to an internal temperature of 145°F (FDA, 2005). All poultry should be cooked to an internal temperature of 165°F. For more information on proper cooking temperatures, visit http://www.fsis.usda.gov/wps/wcm/connect/625d9435-4f14-46fe-b207-5d6688cb4db5/Safe_Miminum_Internal_Temperature_Chart.pdf?MOD=AJPERES.

Using a properly calibrated thermometer and proper thermometer placement is the only way to ensure proper temperature management. For more information on proper thermometer calibration, visit http://www.myfloridalicense.com/dbpr/hr/forms/documents/5030_062.pdf.

Collectively, we can prevent foodborne illness by remembering and implementing three control measures: keep food clean, keep food cold, and keep food hot. Do not let raw meat juices contaminate other food items, wash raw chicken, or use the same plate and/or utensils for raw and cooked protein. Wash your hands thoroughly to minimize cross-contamination. Pack raw meat in sealed containers or bags and place it at the bottom of a cooler. Bacteria that cause foodborne illnesses thrive in temperatures between 40 and 140°F. Raw meat should be kept below 40°F, and leftover cooked food should be promptly refrigerated. For more information about food safety, see EDIS document AN283, *Food Processing: The Meat We Eat*, at http://edis.ifas.ufl.edu/an283.

Do

- Have youth make a list of potential outdoor cooking safety hazards.
- Discuss fire and food safety hazards and preventative measures.
- Demonstrate safe grilling techniques and proper utensil and meat thermometer use.
- Demonstrate proper thermometer calibration.

Reflect

- Which hazards can arise while cooking meat outdoors?
- What are the primary pathogens of concern for each protein and where do they come from?
- Which preventative measures can be taken to ensure safety while cooking meat outdoors?
- Why should we identify potential hazards before we start cooking meat outdoors?

Apply

- Think about everyday cooking at your own home. Does your family follow these safety procedures?
- For outdoor cooking, what can you do to increase your family's awareness of location, fire, and food safety hazards?

Conclusion

Educating youth about ways to safely prepare animal protein on a grill will improve grilling safety, combat childhood obesity, improve the nutritional knowledge and cooking skills of today's youth, and impart knowledge about safe handling and proper degree of doneness in order to produce safe and palatable meat dishes.

For up-to-date information on the Florida 4-H Tailgating Contest, please visit http://florida4h.org/programsandevents_/animalscience/4-h-tailgating-contest/.

Additional Resources

Florida 4-H Tailgating Contest: http://florida4h.org/programsandevents_/animalscience/4-h-tailgating-contest/

State 4-H/FFA Meat Judging Contest: http://animal.ifas.ufl.edu/youth/livestock/meatsJudging.shtml

4-H Poultry Judging Event: http://animal.ifas.ufl.edu/youth/Poultry/index.shtml

Florida Hog & Ham Program: http://animal.ifas.ufl.edu/youth/livestock/HogHam.shtml

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