

## **2013 Iowa FFA Food Science CDE**

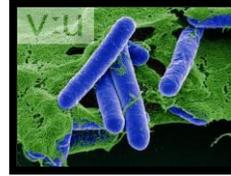
### **Food Safety and Sanitation Section**

In this segment of the contest, you will be given pictures/graphics to view in reference to common problems that exist within the food industry. Your task for each set of pictures and/or graphics are to: (a) identify the problem and (b) select the most appropriate solution to the problem. There will be five (5) sets of food safety and/or sanitation concerns with each question valued at 5 points for a total of 50 possible points.

**When done, return this document with your answer sheet to the test proctor.**

**DO NOT MARK ON THIS DOCUMENT**

Set #1:



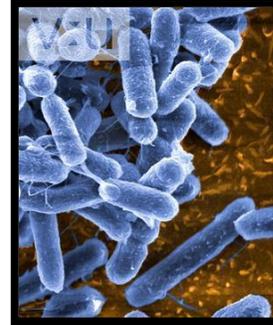
Question 1: These pictures most represent which of the following food industry concerns:

- a. botulism
- b. E coli
- c. Salmonella
- d. Staphylococcus
- e. Listeria

Question 2: In reference to the above pictures, what would be the solution to this food industry concern/problem?

- a. Sterilize raw foods at the plants, pasteurization of milk, and improving safe food handling practices in kitchens
- b. Thoroughly cook raw food from animal sources, such as beef, pork, or poultry.; Wash raw vegetables thoroughly before eating; and Keep uncooked meats separate from vegetables and from cooked foods and ready-to-eat foods.
- c. Drink only pasteurized milk, juice, or cider; wash fruits and vegetables under running water, especially those that will not be cooked; and cook all ground beef and hamburger thoroughly.
- d. Home canned products need to use higher level acids, follow strict hygienic procedures, and prepare foods using high temperatures.
- e. Do not eat raw or undercooked eggs, poultry, or meat.; avoid Cross-contamination of foods; and wash hands after contact with animal feces and/or reptiles.

Set 2:



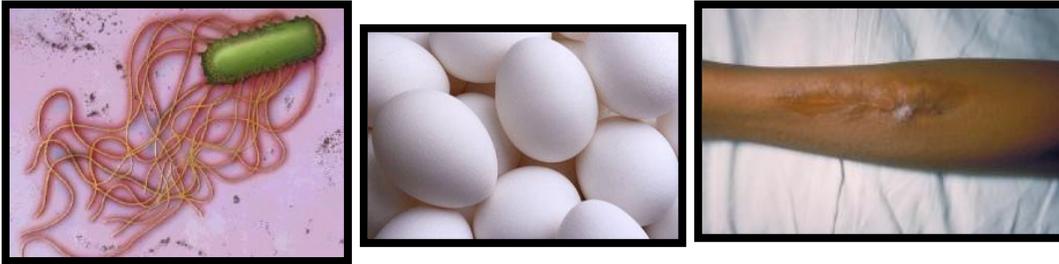
Question 3: These pictures most represent which of the following food industry concerns:

- a. botulism
- b. E coli
- c. parasites
- d. Staphylococcus
- e. metal contamination in ground beef

Question 4: In reference to the above pictures, what would be the solution to this food industry concern/problem?

- a. Sterilize raw foods at the plants, pasteurization of milk, and improving safe food handling practices in kitchens
- b. Thoroughly cook raw food from animal sources, such as beef, pork, or poultry.; Wash raw vegetables thoroughly before eating; and Keep uncooked meats separate from vegetables and from cooked foods and ready-to-eat foods.
- c. Drink only pasteurized milk, juice, or cider; wash fruits and vegetables under running water, especially those that will not be cooked; and cook all ground beef and hamburger thoroughly.
- d. Home canned products need to use higher level acids, follow strict hygienic procedures, and prepare foods using high temperatures.
- e. Do not eat raw or undercooked eggs, poultry, or meat; avoid Cross-contamination of foods; and wash hands after contact with animal feces and/or reptiles.

Set 3:



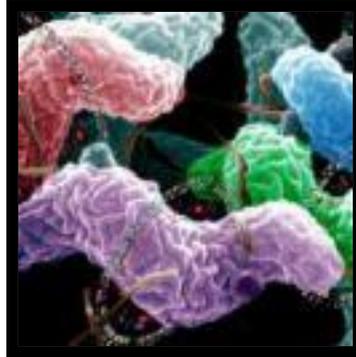
Question 5: These pictures most represent which of the following food industry concerns:

- a. Botulism
- b. Parasites
- c. Employee hygiene
- d. Staphylococcus
- e. Salmonella

Question 6: In reference to the above pictures, what would be the solution to this food industry concern/problem?

- a. Thoroughly cook raw food from animal sources, such as beef, pork, or poultry.; Wash raw vegetables thoroughly before eating; and Keep uncooked meats separate from vegetables and from cooked foods and ready-to-eat foods.
- b. Carefully wash fruits and vegetables, and steam oysters before eating them; Frequently wash your hands, especially after toilet visits and changing diapers and before eating or preparing food; and Thoroughly clean and disinfect contaminated surfaces immediately after an episode of illness.
- c. Always wash hands with warm, soapy water; if your hands have any kind of skin abrasion or infection, always use clean disposable gloves; and keep cutting boards clean.
- d. Do not eat raw or undercooked eggs, poultry, or meat.; avoid Cross-contamination of foods; and wash hands after contact with animal feces and/or reptiles.
- e. Handle poultry carefully to prevent cross-contamination; utilize proper wrapping; and most egg products should be pasteurized.

Set #4:



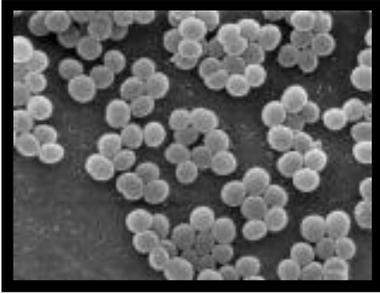
Question 7: These pictures most represent which of the following food industry concerns:

- a. rodent control
- b. antibiotics in food
- c. Salmonella
- d. Campylobacter
- e. Listeria

Question 8: In reference to the above pictures, what would be the solution to this food industry concern/problem?

- a. Home canned products need to use higher level acids, follow strict hygienic procedures, and prepare foods using high temperatures.
- b. Sterilize raw foods at the plants, pasteurization, and improving safe food handling practices in kitchens.
- c. Increased regulations; over-use promotes emergence of resistant bacteria; and regulated usages to minimize residues in the human food chain.
- d. Thoroughly cook raw food from animal sources, such as beef, pork, or poultry.; Wash raw vegetables thoroughly before eating; and Keep uncooked meats separate from vegetables and from cooked foods and ready-to-eat foods.
- e. Always wash hands with warm, soapy water; if your hands have any kind of skin abrasion or infection, always use clean disposable gloves; and keep cutting boards clean.

Set 5:



Question 9: These pictures most represent which of the following food industry concerns:

- a. botulism
- b. E coli
- c. parasites
- d. Staphylococcus
- e. metal contamination in ground beef

Question 10: In reference to the above pictures, what would be the solution to this food industry concern/problem?

- a. Sterilize raw foods at the plants, pasteurization of milk, and improving safe food handling practices in kitchens.
- b. Thoroughly cook raw food from animal sources, such as beef, pork, or poultry.; Wash raw vegetables thoroughly before eating; and Keep uncooked meats separate from vegetables and from cooked foods and ready-to-eat foods.
- c. Drink only pasteurized milk, juice, or cider; wash fruits and vegetables under running water, especially those that will not be cooked; and cook all ground beef and hamburger thoroughly.
- d. Home made or processed foods need to be properly stored; when preparing foods, remember to prepare foods under sanitary conditions; if food is to be stored longer than two hours, keep hot foods hot (over 140°F) and cold foods cold (40°F or under).
- e. Do not eat raw or undercooked eggs, poultry, or meat; avoid Cross-contamination of foods; and wash hands after contact with animal feces and/or reptiles.

## **2013 Iowa FFA Food Science CDE**

### **Food Safety and Sanitation Section**

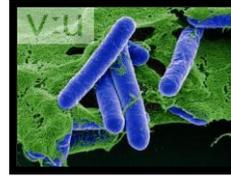
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# **KEY**

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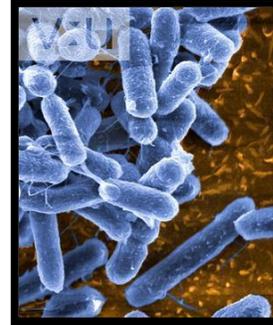
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- a. **botulism**
- b. E coli
- c. Salmonella
- d. Staphylococcus
- e. Listeria

Question 2: In reference to the above pictures, what would be the solution to this food industry concern/problem?

- a. Sterilize raw foods at the plants, pasteurization of milk, and improving safe food handling practices in kitchens (campy)
- b. Thoroughly cook raw food from animal sources, such as beef, pork, or poultry.; Wash raw vegetables thoroughly before eating; and Keep uncooked meats separate from vegetables and from cooked foods and ready-to-eat foods. (listeria)
- c. Drink only pasteurized milk, juice, or cider; wash fruits and vegetables under running water, especially those that will not be cooked; and cook all ground beef and hamburger thoroughly. (e coli)
- d. **Home canned products need to use higher level acids, follow strict hygienic procedures, and prepare foods using high temperatures. (botulism)**
- e. Do not eat raw or undercooked eggs, poultry, or meat.; avoid Cross-contamination of foods; and wash hands after contact with animal feces and/or reptiles. (Salmonella)

Set 2:



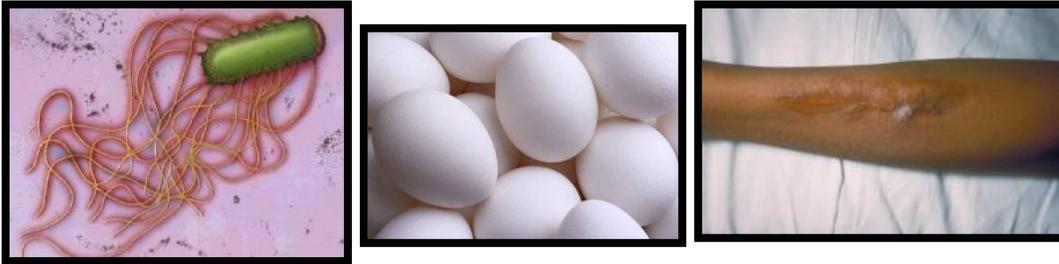
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- c. parasites
- d. Staphylococcus
- e. metal contamination in ground beef

Question 4: In reference to the above pictures, what would be the solution to this food industry concern/problem?

- a. Sterilize raw foods at the plants, pasteurization of milk, and improving safe food handling practices in kitchens (campy)
- b. Thoroughly cook raw food from animal sources, such as beef, pork, or poultry.; Wash raw vegetables thoroughly before eating; and Keep uncooked meats separate from vegetables and from cooked foods and ready-to-eat foods. (listeria)
- c. **Drink only pasteurized milk, juice, or cider; wash fruits and vegetables under running water, especially those that will not be cooked; and cook all ground beef and hamburger thoroughly. (e coli)**
- d. Home canned products need to use higher level acids, follow strict hygienic procedures, and prepare foods using high temperatures. (botulism)
- e. Do not eat raw or undercooked eggs, poultry, or meat; avoid Cross-contamination of foods; and wash hands after contact with animal feces and/or reptiles. (Salmonella)

Set 3:



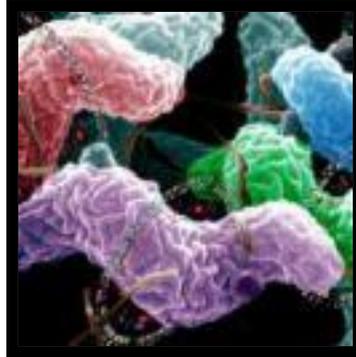
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- b. Parasites
- c. Employee hygiene
- d. Staphylococcus
- e. **Salmonella**

Question 6: In reference to the above pictures, what would be the solution to this food industry concern/problem?

- a. Thoroughly cook raw food from animal sources, such as beef, pork, or poultry.; Wash raw vegetables thoroughly before eating; and Keep uncooked meats separate from vegetables and from cooked foods and ready-to-eat foods. (listeria)
- b. Carefully wash fruits and vegetables, and steam oysters before eating them; Frequently wash your hands, especially after toilet visits and changing diapers and before eating or preparing food; and Thoroughly clean and disinfect contaminated surfaces immediately after an episode of illness. (norovirus)
- c. Always wash hands with warm, soapy water; if your hands have any kind of skin abrasion or infection, always use clean disposable gloves; and keep cutting boards clean (employee hygiene)
- d. **Do not eat raw or undercooked eggs, poultry, or meat.; avoid Cross-contamination of foods; and wash hands after contact with animal feces and/or reptiles. (Salmonella)**
- e. Handle poultry carefully to prevent cross-contamination; utilize proper wrapping; and most egg products should be pasteurized. (mixture)

Set #4:



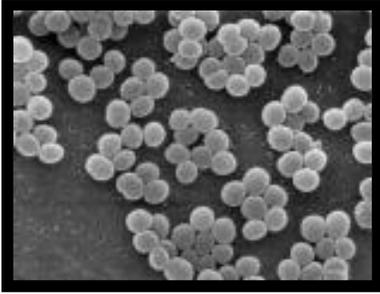
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- d. Campylobacter**
- e. Listeria

Question 8: In reference to the above pictures, what would be the solution to this food industry concern/problem?

- a. Home canned products need to use higher level acids, follow strict hygienic procedures, and prepare foods using high temperatures. (botulism)
- b. Sterilize raw foods at the plants, pasteurization, and improving safe food handling practices in kitchens (campy)**
- c. Increased regulations; over-use promotes emergence of resistant bacteria; and regulated usages to minimize residues in the human food chain. (antibiotics)
- d. Thoroughly cook raw food from animal sources, such as beef, pork, or poultry.; Wash raw vegetables thoroughly before eating; and Keep uncooked meats separate from vegetables and from cooked foods and ready-to-eat foods. (listeria)
- e. Always wash hands with warm, soapy water; if your hands have any kind of skin abrasion or infection, always use clean disposable gloves; and keep cutting boards clean (employee hygiene)

Set 5:



Question 9: These pictures most represent which of the following food industry concerns:

- a. botulism
- b. E coli
- c. parasites
- d. Staphylococcus**
- e. metal contamination in ground beef

Question 10: In reference to the above pictures, what would be the solution to this food industry concern/problem?

- a. Sterilize raw foods at the plants, pasteurization of milk, and improving safe food handling practices in kitchens (campy)
- b. Thoroughly cook raw food from animal sources, such as beef, pork, or poultry.; Wash raw vegetables thoroughly before eating; and Keep uncooked meats separate from vegetables and from cooked foods and ready-to-eat foods. (listeria)
- c. Drink only pasteurized milk, juice, or cider; wash fruits and vegetables under running water, especially those that will not be cooked; and cook all ground beef and hamburger thoroughly. (e coli)
- d. Home made or processed foods need to be properly stored; when preparing foods, remember to prepare foods under sanitary conditions; if food is to be stored longer than two hours, keep hot foods hot (over 140°F) and cold foods cold (40°F or under). (Staphylococcus)**
- e. Do not eat raw or undercooked eggs, poultry, or meat; avoid Cross-contamination of foods; and wash hands after contact with animal feces and/or reptiles. (Salmonella)