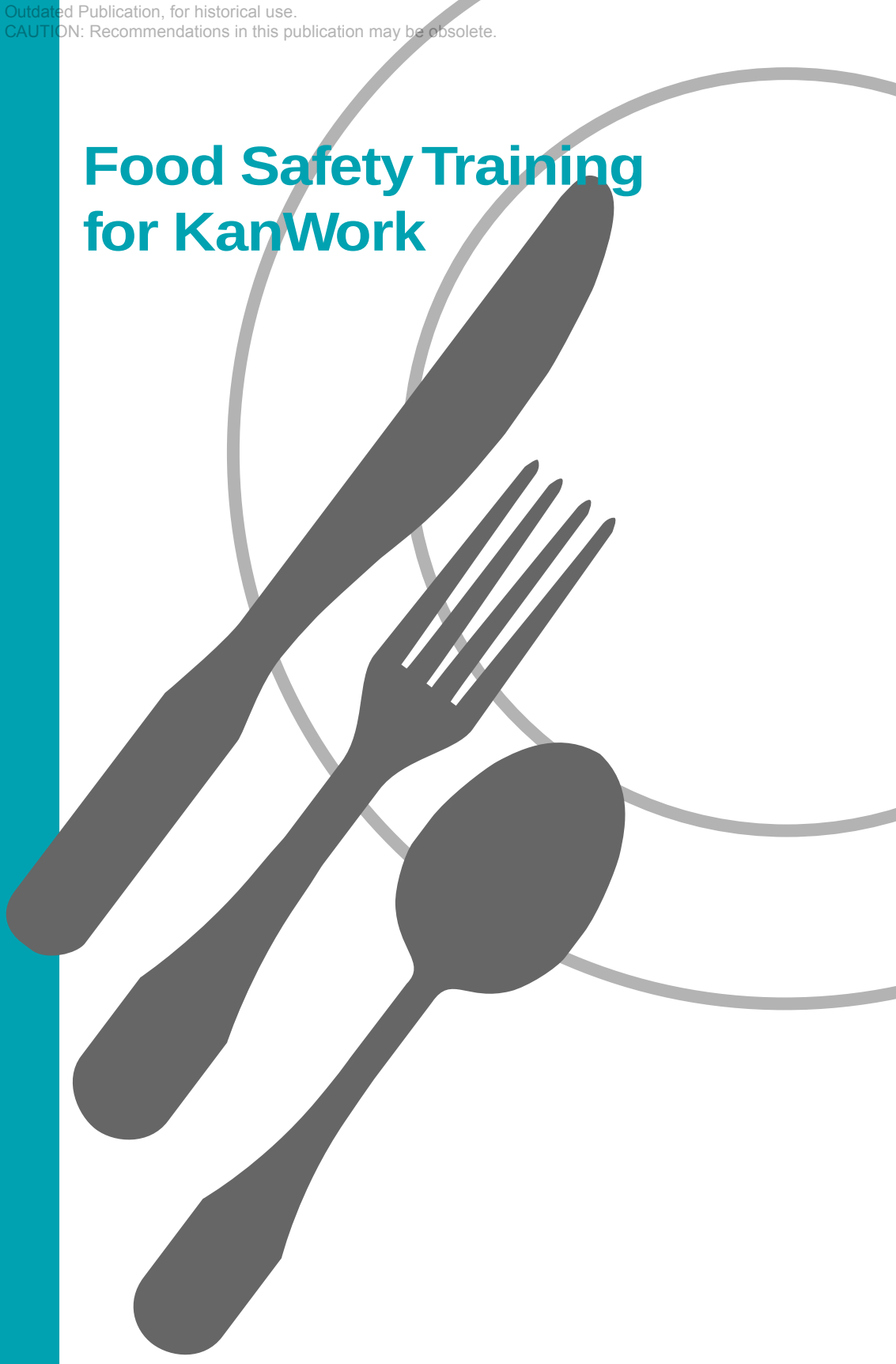
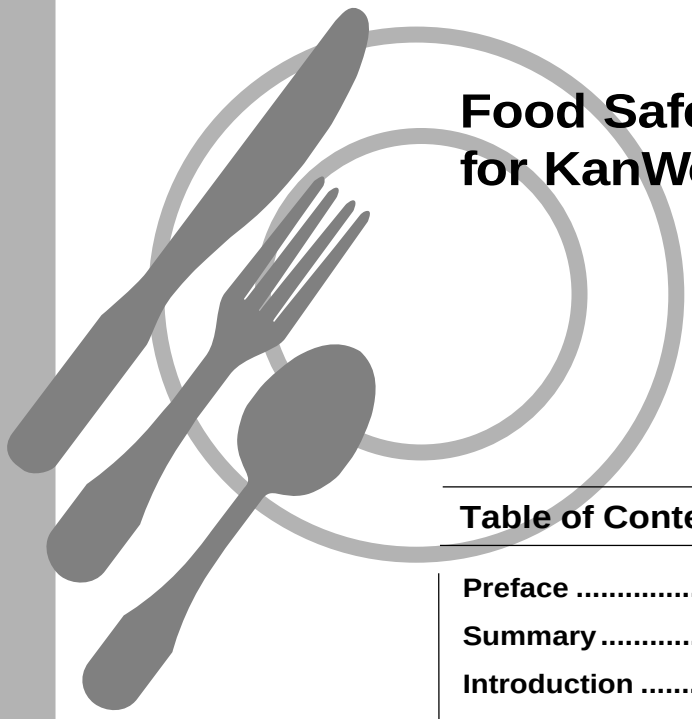
FOOD SAFETY IN FOOD SERVICE

Food Safety Training for KanWork



Final Report

Cooperative Extension Service
Kansas State University



Food Safety Training for KanWork

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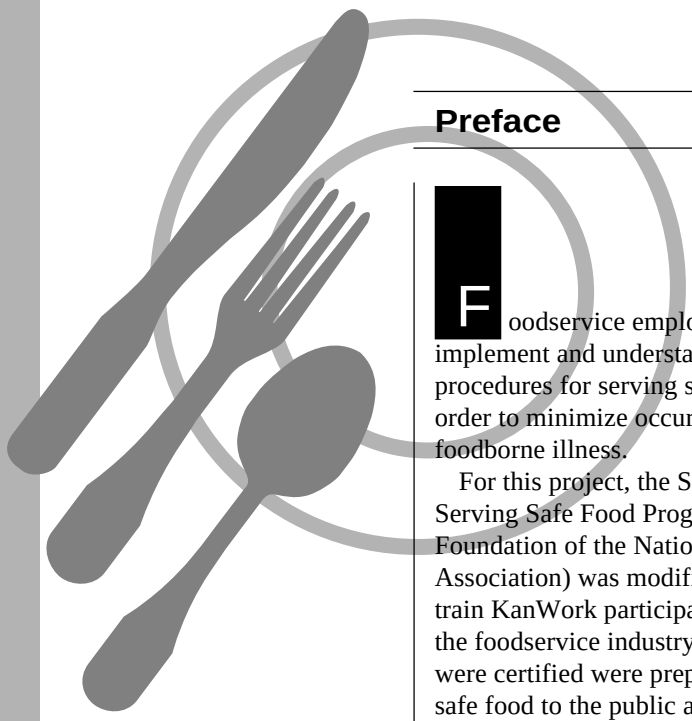


Preface

Foodservice employees need to implement and understand the proper procedures for serving safe food in order to minimize occurrences of foodborne illness.

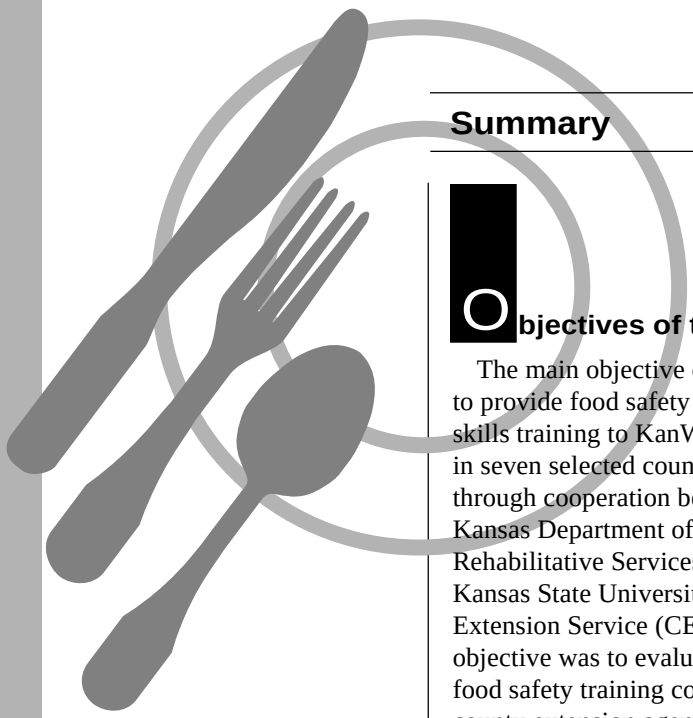
For this project, the SERVSAFE Serving Safe Food Program (Education Foundation of the National Restaurant Association) was modified and used to train KanWork participants for work in the foodservice industry. Those who were certified were prepared to provide safe food to the public and to their families.

The project was a collaborative effort of the Kansas State University (KSU) Cooperative Extension Service (CES), Department of Foods and Nutrition, and Department of Hotel, Restaurant, Institution Management and Dietetics, and the Kansas Department of Social and Rehabilitation Services (SRS).

Through the Job Club Program, this project supported objectives of both the KSU CES Food Safety Initiative and the State of Kansas Department of Social and Rehabilitative Services' KanWork Program.

The project involved the efforts of local county extension agents of the CES and local Employment Preparation Services (EPS) staff members of the SRS in Crawford, Douglas, Ellis, Ford, Leavenworth, Saline, and Shawnee counties.

This project was funded in part by USDA Extension Service under the Food Safety and Quality Initiative, special project number 94-EFSQ-1-4111.



Summary

Objectives of the Project

The main objective of the project was to provide food safety and job-seeking skills training to KanWork participants in seven selected counties in Kansas, through cooperation between the Kansas Department of Social and Rehabilitative Services (SRS) and the Kansas State University Cooperative Extension Service (CES). A second objective was to evaluate and document food safety training conducted by county extension agents who had completed the SERVSAFE Applied Foodservice Sanitation Course.

Learner objectives

Learner objectives for KanWork participants were:

- Understand the need for learning and practicing food safety skills.
- Define important food safety terms.
- Identify potentially hazardous foods.
- Identify personal hygiene practices that may compromise food safety.
- Demonstrate how to use a thermometer and record food temperatures in a log.
- Use proper procedures for receiving food.
- Discuss procedures for preparing, holding, and serving foods safely.
- Identify procedures for cleaning and sanitizing foodservice equipment.
- Describe the way safe food-handling in each area contributes to employee and customer safety and to the overall success of the operation.
- Complete an application for employment.
- Obtain employment in a foodservice operation.

Process objectives

- Provide information on job opportunities for KanWork participants.
- Increase cooperation between SRS and the KSU CES
- Reduce the incidence of foodborne illness outbreaks in the state of Kansas.
- Improve the visibility of extension agents with nontraditional audiences.
- Evaluate the project based on participant outcomes.
- Evaluate consequences of extension agent training with a mailed questionnaire.

Methodology

State Employment Preparation Services (EPS) staff and state extension personnel selected seven pilot counties. The counties had both extension agents who had completed the SERVSAFE Applied Foodservice Sanitation course of the Educational Foundation of the National Restaurant Association and EPS staff who were involved in a program called KanWork. The extension agents and EPS staff members attended two, one-day organizational and procedural sessions conducted by state extension specialists and KanWork leaders. The goals of the pilot project were discussed and procedures for implementation were clarified and determined. SERVSAFE and Job Club trainings were planned for each of the seven selected counties during the winter and spring of 1995. Extension's role was to adapt the SERVSAFE program for the target audience and teach that component at the local level. Extension also provided overall project coordination.

SRS's role was to:

- Refer KanWork participants for food safety training.
- Teach resume writing and job application skills to participants on the local level.
- Assist in evaluating the training program.

The training plan called for KanWork participants to receive twelve hours of SERVSAFE food safety training and thirty to forty hours of Job Club training.

County extension agents conducted the SERVSAFE trainings; EPS staff members conducted the Job Club

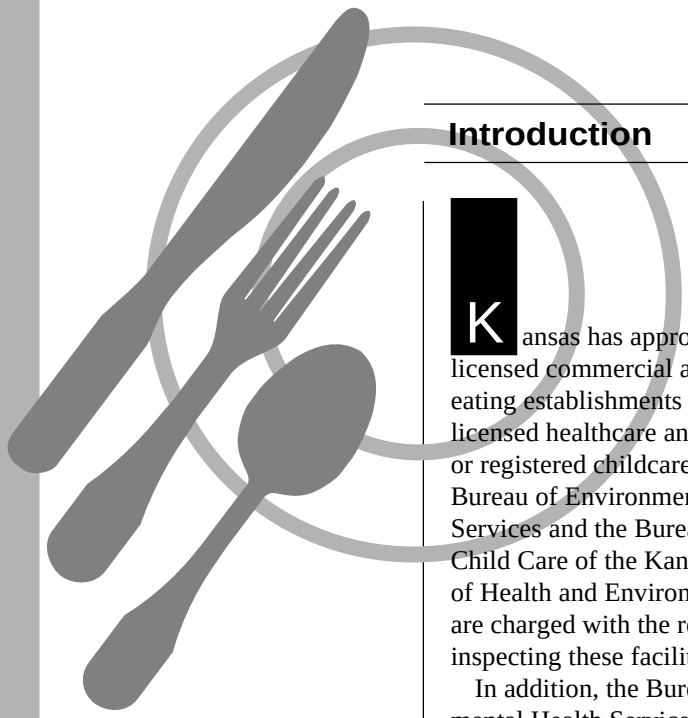
training. The Job Club trainings consisted of instruction on resume writing, completing employment applications, interviewing, and job retention skills.

Results

A total of thirty-one KanWork participants completed the SERVSAFE training and twenty-four KanWork participants completed both the SERVSAFE and Job Club training. All of the thirty-one KanWork participants who completed the SERVSAFE training passed the post-test and received a certificate.

Six of the participants obtained a position in foodservice after they completed the SERVSAFE training. Three participants acquired employment in other industries. One person decided to complete the GED. Three people were already employed part-time in the foodservice industry and desired the SERVSAFE certificate to increase their opportunities for future advancement. Two participants moved out of their counties so their employment status is unknown. The remaining fourteen participants did not have any reported employment at the time this report was prepared.

Extension agents and EPS staff reported that participants increased their self confidence, their knowledge regarding safe food-handling to apply at home as well as in foodservice, and they had positive experiences in group interaction.



Introduction

Kansas has approximately 11,600 licensed commercial and institutional eating establishments along with 873 licensed healthcare and 9,538 licensed or registered childcare facilities. The Bureau of Environmental Health Services and the Bureau of Adult and Child Care of the Kansas Department of Health and Environment (KDHE) are charged with the responsibility for inspecting these facilities.

In addition, the Bureau of Environmental Health Services inspects but does not license 4,000 operations, including retail grocery stores, retail meat markets and lockers, food processing (manufacturing) plants, variety stores that sell food, bakeries, bottling plants, food warehouses, wholesale food distributors, stores, and specialty food shops (Hale, 1991).

Kansas foodservice employees (both commercial and noncommercial) are not required to complete any food safety training or undergo health examinations to meet state requirements.

Providing effective educational programs to this audience is difficult because of the large number of people involved, high rates of employee turnover, costs to employers, lack of manager/owner knowledge, and nonuniform systems for training and certifying workers.

The School Foodservice Research Institute identified that training school foodservice employees in all aspects of the operation, including sanitation, will be a challenge in the 1990s (Trends, 1992).

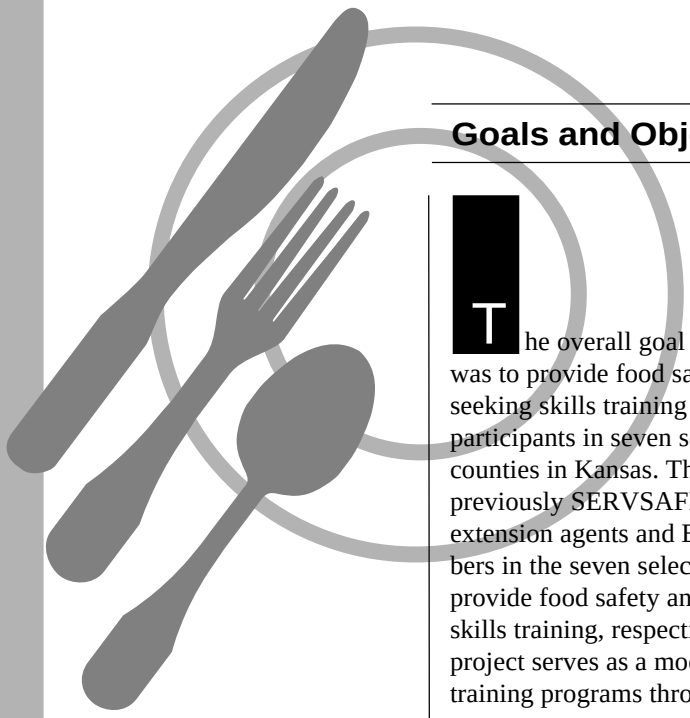
According to a recent study, nursing home residents accounted for 2.4 percent of the foodborne illnesses in the United States between 1975 and 1987, but 19.4 percent of the deaths. The elderly were ten times more likely to die of foodborne illnesses than younger adults (Williams, 1991).

In Kansas in 1992, 78.7 percent of long term care facilities were cited for storage, preparation, distribution, and serving food under sanitary conditions violations (Dickison, 1993).

Commercial foodservice operators may lack knowledge of food safety and of the impact this would have on the public health or the potential liability of the operation. Commercial operators usually do not belong to professional societies that require continuing education as do school foodservice employees, dietary managers, dietetic technicians registered, and registered dietitians. Resources for training may not be readily available in communities.

Because of the lack of incentive to obtain training and limited commitment to food safety training of employees by operators, it may be critical to train foodservice employees before they start to work.

KanWork participants have been identified as persons needing education, job skills training, and job readiness training. Through food safety training, KanWork participants may more readily obtain employment in the foodservice industry and maximize their potential. Also, through this training, KanWork participants will improve the level of food sanitation for Kansas residents.



Goals and Objectives

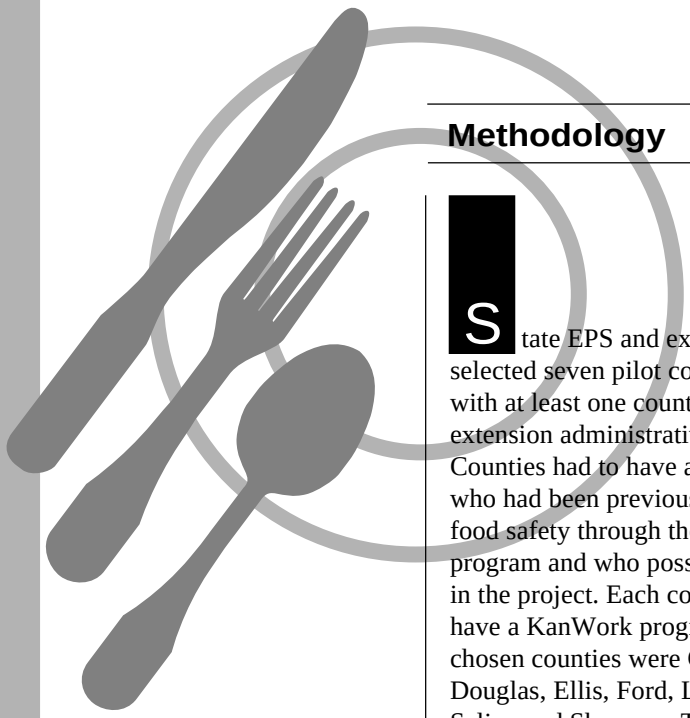
The overall goal of the project was to provide food safety and job-seeking skills training to KanWork participants in seven selected pilot counties in Kansas. The project linked previously SERVSAFE-certified extension agents and EPS staff members in the seven selected counties to provide food safety and job-seeking skills training, respectively. This project serves as a model for similar training programs throughout the state.

KanWork participant objectives

- Understand the need for learning and practicing food safety skills.
- Define important food safety terms.
- Identify potentially hazardous foods.
- Identify personal hygiene practices that may compromise food safety.
- Demonstrate how to use a thermometer and record food temperatures in a temperature log.
- Use proper procedures for receiving food.
- Discuss procedures for preparing, holding, and serving foods safely.
- Identify procedures for cleaning and sanitizing foodservice equipment.
- Describe the way safe food-handling in each area contributes to employee and customer safety and to the overall success of the operation.
- Complete an application for employment.
- Write a resume.
- Obtain employment in a foodservice operation.

Process objectives

- Provide information on job opportunities for KanWork participants.
- Increase cooperation between SRS and the KSU CES.
- Reduce the incidence of foodborne illness outbreaks in the state of Kansas.
- Improve the visibility of extension agents with nontraditional audiences.
- Evaluate the project based on participant outcomes.



Methodology

State EPS and extension personnel selected seven pilot counties in the state with at least one county in each extension administrative region. Counties had to have an extension agent who had been previously certified in food safety through the SERVSAFE program and who possessed an interest in the project. Each county also had to have a KanWork program in place. The chosen counties were Crawford, Douglas, Ellis, Ford, Leavenworth, Saline and Shawnee. The selected extension agents and EPS staff members (one each per county) attended two, one-day planning and development sessions conducted by state extension specialists and state KanWork administrators on September 16, 1994, and December 14, 1994.

The Food Safety Training Program

SERVSAFE and Job Club trainings were held in each of the selected counties in the winter and spring 1995. The focus of the food safety training was to educate KanWork participants in food sanitation skills to reduce the risk of foodborne illness. County extension agents conducted the food safety training. A majority of the content of the training sessions was derived from SERVSAFE materials developed by the Educational Foundation of the National Restaurant Association for foodservice sanitation employee training. The content was based on the fourth edition of the *Applied Foodservice Sanitation, A Certification Coursebook*, (1992) the key component of the SERVSAFE food safety training program. SERVSAFE is a nationally recognized training program that results in a certification examination.

SERVSAFE materials used included:

- The course book as a resource for the instructors
- Overheads
- Slides
- Videos
- Instructor's guide
- Student workbooks

Because these materials are an excellent source of food safety information, include all aspects of food safety, are application oriented, are well-tested and are nationally recognized, they were used in the training rather than developing new materials.

The twelve-hour training was divided into three, four-hour segments (Appendix A). Each four-hour segment was arranged into five- to ninety-minute intervals. Besides SERVSAFE materials, there were other items interspersed throughout the twelve hours of training in order to visualize and reinforce the principles presented. These were:

- Petri dish contamination
- Glow germ activity
- Overview of microorganisms
- Yeast experiment
- Food Safety "Jeopardy"
- "Food Safety Is No Mystery" video
- Tour of foodservice facility
- Job opportunities and careers in foodservice
- Celebration of completion

Initially the food safety trainings were scheduled for January through March 1995. However, Ford, Saline, and Shawnee counties rescheduled their trainings to March or April due to low participation. Shawnee County rescheduled a third time due to personal reasons. The training was held in June.

KanWork participants were recruited through the use of EPS staff members (seven counties), posters (five counties), publicity flyers (three counties) and a news release (one county).

The KSU CES provided the following resources to each county:

- Food safety training outline
- Promotional brochure with registration form
- Promotional posters
- Brochure for potential employers
- Certificates of completion
- SERVSAFE Leader's Guide

- SERVSAFE Participant's Workbook
- Overview on microorganisms
- SERVSAFE videos
- Prizes (pencils and refrigerator magnets)
- Petri dishes
- Glow germ kit
- Digital thermometer
- Slides of violations
- Food safety "Jeopardy"
- Information and slides on career opportunities in the foodservice industry

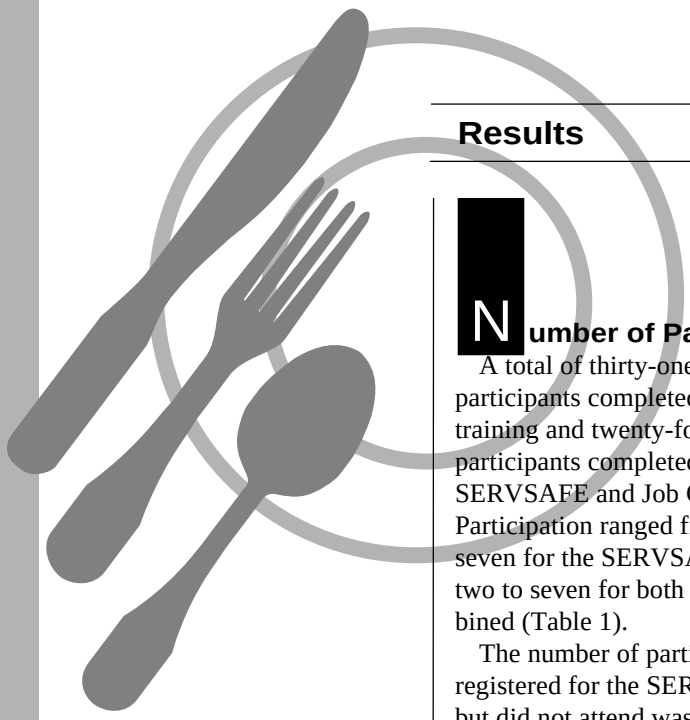
The Job-seeking Skills Training

The focus of the job-seeking skills training was to educate KanWork participants in resume writing, completing employment applications, interviewing and job retention skills through Job Club.

The Job Club training was conducted by EPS staff members and consisted of thirty to forty hours of job skills training over a two-week period. Participants received a 126- page Kansas Job Club Manual.

Some of the topics covered are listed below:

- Grooming hints
- Why people get hired
- Why people get fired
- Description of a good employee
- Good work habits
- Manners and appearance
- Networking
- Employment applications
- Resumes
- Interviewing
- Telephoning
- First day on the job
- Job performance
- Promotion
- Job retention



Results

Number of Participants

A total of thirty-one KanWork participants completed the SERVSAFE training and twenty-four KanWork participants completed both the SERVSAFE and Job Club training. Participation ranged from three to seven for the SERVSAFE training and two to seven for both trainings combined (Table 1).

The number of participants who registered for the SERVSAFE trainings but did not attend was high. Ford County originally had twenty-one people registered for their February training, but only two people attended. Therefore, the training was rescheduled for March.

Participants who registered for the March SERVSAFE training had to sign a Self Sufficiency Agreement and, if they did not attend, they would receive a cash assistance penalty. As a result, only one person registered, but did not attend the March training.

Saline County originally had nine people registered for their February training, but only one person attended. Therefore, Saline County rescheduled their training to April. In April, two out of eight people registered did not attend.

Shawnee County originally had five people registered for their February training, but only one person came. Therefore, their training was rescheduled to April and due to personal reasons rescheduled again to June.

The reasons registrants gave for not attending were family, transportation, time, no interest in a job in foodservice, and other.

Table 1. Number of KanWork Participants

County	SERVSAFE only	SERVSAFE and Job Club
Crawford	5	5
Douglas	4	2
Ellis	4	2
Ford	7	7
Leavenworth	3	3
Saline	6	3
Shawnee	2	2

Table 2. Percent of Items Answered Correctly in *Pre- and *Post-tests

County	Pre-test	Post-test
Crawford	84%	90%
Douglas	100%	93%
Ellis	80%	87%
Ford	N/A	84%
Leavenworth	N/A	97%
Saline	88%	88%
Shawnee		

** Different tests used.*

Food Safety Knowledge Gained

The participants took a ten-item pretest and a thirty-item post-test to determine their food safety knowledge. The percentage of questions answered correctly on the post-test was higher in two counties (Table 2).

Even though the results would appear to not show a significant amount of food safety knowledge gained, the pretest was significantly easier than the post-test so that participants were not overwhelmed and frustrated before the training began. Furthermore, all of the extension agents and EPS staff members agreed that the participants learned a wealth of new and practical food safety information. All of the thirty-one KanWork participants who completed the SERVSAFE training passed the post-test and received a certificate.

Food Service Employment Received

Nine out of the thirty-one participants obtained a position in foodservice immediately after completing the SERVSAFE training. The foodservice positions that were obtained appear in Table 3.

The average salary and the average number of hours employed was $5.40 per hour and twenty-nine hours per week, respectively.

Other Employment Received

Three participants obtained employment in other industries. One person decided to complete the GED. Three people were already employed part time in the foodservice industry and desired the SERVSAFE certificate to increase their opportunities for future advancement. Two participants moved out of their counties so their employment status is unknown. The remaining participants did not have any reported employment at the time this report was prepared. SRS is continuing to reach the participants for further evaluation.

Other Benefits Obtained

One of the greatest benefits the participants received was a boost in their self-confidence. Although this benefit is unmeasurable, it is important to their future success.

Group sizes were small, and each individual received personal attention. The learning environment was non-threatening. One participant became extremely excited when receiving his certificate because it was the first certificate he had ever received.

Another benefit is that all of the participants know how to be safer food handlers at home. Also, the training gave the participants experience in group interaction..

All of the extension agents and EPS staff members have expressed interest in having an ongoing program of food safety and job-seeking skills training. Ford and Saline counties scheduled classes for June and September, respectively. Ellis County planned a session for fall. It is anticipated that more classes will be scheduled.

Employer's Point of View

The manager at one of the restaurants toured as part of the food safety training invited all of the KanWork participants to come back and apply for a job. At another restaurant, the employer stated that, when hiring, applicants with a background in food safety would be given priority over other applicants. The employer of one of the KanWork participants who received employment stated that this person received an interview only because she had a SERVSAFE certificate.

Benefits of the Project

The overall goal of the project was to provide food safety and job-seeking skills training to KanWork participants in seven selected counties in Kansas. This goal was reached by providing this training to thirty-one participants. Other benefits were:

- Cooperation between SRS and the KSU CES was increased.
- The visibility of extension agents with nontraditional audiences was improved.
- Participants gained a sense of accomplishment and self-worth.
- EPS staff members and KanWork participants were informed of the numerous opportunities for employment in the foodservice industry beyond the general stereotype of fast-food employment.

Table 3. Foodservice Positions Obtained

Participant number	Facility	Type of position	Hours/ week	Salary/ hour
1	Senior Center	Cook's Asst.	40	$4.25
2	School FS	Food Server	15	6.26
3	School FS	FS Worker I	20	5.14
4	Bus. and Ind.	Cook	40	6.25
5	Mex. Rest.	Cook's Asst.	30	4.50
6	College and Univ.	FS Worker	40	6.33
7	College and Univ.	FS Worker	40	5.75
8	School FS	FS Worker I	20	5.14
9	School FS	FS Worker	16	4.95

Future Recommendations

Recruitment

In order to be successful in getting KanWork participants to come to SERVSAFE training, SRS needs to be firmly committed at all levels. Personnel at the state level need to get personnel at the local level enthused about the program. At the local level, all case workers need to be thoroughly informed about the program so they will be able to sell the program to their clients.

To increase the percentage of those who attend after registering, incentives for coming or disincentives for not coming would be helpful.

On the other hand, extension agents need to be prepared to work with only a small group because only half of those registered actually participated in the training.

Format

It is helpful if the SERVSAFE certificate is given to the participants after Job Club training in order to encourage attendance at the training.

Variety, hands on participation, and visual aids are the keys to maintaining the participants interest throughout the training. The activities the participants liked the most were the videos, glow germ activity, petri dish contamination, tours, and games.

Obtaining Employment

It is important to facilitate the job search process by knowing the foodservice operations in the community. State and federal institutional foodservice facilities are often overlooked as places of employment and may offer higher wages and benefits.

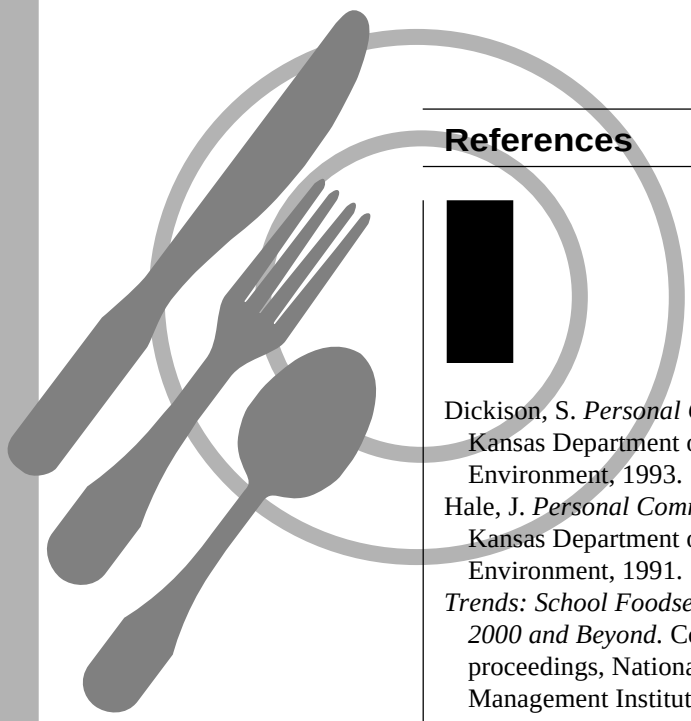
Know which facilities are hiring and have job applications available. Inform potential employers about the training that is being conducted.

If possible, involve potential employers in the training. Allow potential employers the opportunity to talk to the participants about the advantages and disadvantages of working in their facility. Allow time for participants to ask the employer questions.

Other

Other recommendations given by extension agents and EPS staff members involved in this pilot project included:

- Invite former KanWork participants who obtained employment in foodservice as a result of the SERVSAFE training to another training for a time of questions and answers.
- Include a tour of the county extension office in the training.
- Develop and give KanWork participants an evaluation of the training in order to obtain their feedback.
- Laminate the SERVSAFE certificates in order to allow the participants to take their certificate to job interviews without the certificate getting ruined.
- Assess foodservice employment in your county before deciding to conduct a training to determine whether full-time positions with benefits are available.



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Trends: School Foodservice in the Year 2000 and Beyond. Conference proceedings, National Food Service Management Institute, University of Mississippi, 1992.

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Appendix A

Food Safety Training
Day 1 (4 hours)

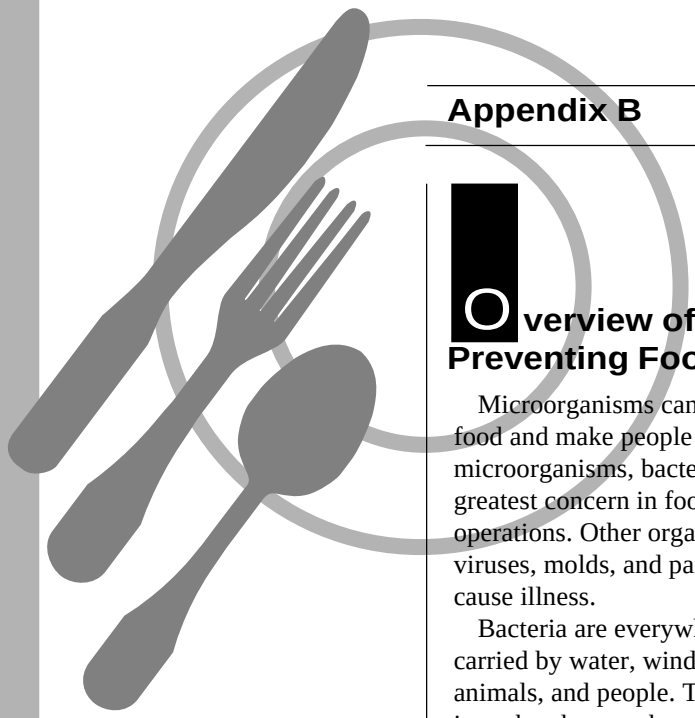
10 min.	Introduction/goal of program—Extension and SRS
15 min.	Get acquainted activity
30 min.	Job opportunities and careers in foodservice—why we are here.
	Information about:
	Foodservice industry
	Types of jobs/salaries/career ladder
	Characteristics of successful foodservice employees
	Slides
	Handout *Choose Food Service* booklets
10 min.	Break
20 min.	Administer pretest and discuss answers.
	Note: Emphasize that it is fine if they do not know any of the correct answers.
10 min.	Introduction—use transparencies 1 through 3.
10 min.	Video: "Introduction to Food Safety"
15 min.	Discuss and emphasize:
	1. Foodborne illness—A disease that is carried or transmitted to people by food.
	2. Contamination—Harmful things, such as microorganisms and chemicals that get into food.
	3. Cross-contamination—Harmful microorganisms are transferred to safe ready-to-eat food by human hands, equipment, utensils, and raw food.
	4. Importance of food safety—Refer to recent well-publicized outbreaks, such as Jack-in-the-Box hamburgers or Schwann's ice cream.
	5. Importance of food safety at home.
10 min.	Contaminate petri dishes.
10 min.	Break
15 min.	Personal hygiene—use transparencies 4 through 6.
10 min.	Video: "Personal Hygiene"
15 min.	Glow germ activity.
20 min.	"Jeopardy"
10 min.	Break
15 min.	Overview of microorganisms in foodborne illness.
	Define and discuss (include cause, example recent outbreak, how to control):
	1. Salmonella
	2. E. coli
	3. Staphylococcus
	4. Clostridium perfringens
15 min.	Using thermometers and keeping temperature logs—use transparencies 7 through 8.
	Include calibration demonstration.

Food Safety Training
Day 2 (4 hours)

15 min.	Recap important points from Day 1: What kind of foods are most likely to be contaminated? Should you work with food if you are ill? What is the proper way to wash your hands? When should you wash your hands? What is the danger zone?
15 min.	Receiving and storing food safely—use transparencies 9 through 10.
15 min.	Video: “Receiving and Storage”
	After video re-emphasize FIFO method of stock rotation.
10 min.	Break
20 min.	Preparing and serving safe food—use transparencies 11 through 16.
15 min.	Video: “Preparation, Cooking, and Service”
	After video re-emphasize: Hot foods hot/cold foods cold Danger zone Cross-contamination
20 min.	Trace two potentially hazardous dishes (chili and baked chicken) through receiving, storage, thawing, cooking, service, cooling, and reheating. Identify critical control points.
10 min.	Break
15 min.	Yeast Experiment
15 min.	"Jeopardy"
15 min.	Cleaning and Sanitizing—use transparencies 17 through 20.
10 min.	Video: “Proper Cleaning and Sanitizing”
10 min.	Discuss safe food handler's rules—use transparency 21.
10 min.	Break
30 min.	Video: “Food Safety is No Mystery”
15 min.	"Jeopardy"

Food Safety Training
Day 3 (4 hours)

5 min.	Examine petri dishes.
45 min.	Review for test.
10 min.	Break
30 min.	Test
90 min.	Tour of foodservice facility.
60 min.	Celebration of completion.



Appendix B

For agent use

Overview of Microorganisms: Preventing Foodborne Iliness

Microorganisms can be carried by food and make people sick. Of all microorganisms, bacteria are the greatest concern in foodservice operations. Other organisms, such as viruses, molds, and parasites, may also cause illness.

Bacteria are everywhere. They are carried by water, wind, insects, plants, animals, and people. They can survive in scabs, the mouth, nose, throat, and intestines. Some bacteria may be on food as it comes into the kitchen. Others can contaminate human hands, and then may end up in food.

Harmful bacteria and the toxins (poisons) some of them produce do not have an odor or taste to help you know they are there. That is why it is so important to keep them out of food or from growing in the first place.

How Bacteria Grow and Reproduce

Bacteria are living single-celled organisms. Individual cells are very small and cannot be seen without a microscope.

Bacteria normally exist as growing or vegetative cells. The cells reproduce by dividing in two. Each cell then divides into two more cells, and so on. If all the conditions are right for growth, bacteria can grow and multiply to huge numbers very quickly.

Some bacteria also produce thick walls and form spores. Spores do not grow and reproduce. But they can often survive cooking. Then, when the food they are in cools from a hot temperature to a warm temperature, they may become vegetative and start to grow and reproduce.

What Bacteria Need to Grow

Bacteria can live anywhere people live. They also can live well in *potentially hazardous foods* because these foods are often moist, rich in proteins and other nutrients, and low in acid.

Potentially hazardous foods include: meat, fish, eggs, poultry, milk, soft cheeses, garlic-in-oil mixtures, cut cantaloupe, foil-wrapped baked potatoes, and cooked vegetables. If kept at warm room temperatures, bacteria in these foods can grow fast.

Conditions for bacterial growth spell out FAT-TOM:

Food: High protein foods from animals are likely to be contaminated or can be easily contaminated. Other food also provide nutrients to bacteria so they can grow.

Acidity: Most *potentially hazardous foods* are low in acid (between ph 4.6 and 7.0). Fresh meats, poultry, and fish are examples. Adding an acid, such as vinegar, may slow bacterial growth but it does not guarantee control.

Time: Potentially hazardous foods should not stay in the *temperature danger zone* for more than four hours during the entire food-handling process.

Temperature: The *temperature danger zone* is 40° F to 140° F. Bacteria can survive refrigeration temperatures, so refrigerating food does not provide complete control of bacteria. But bacteria can grow fast in the danger zone.

Oxygen: Some bacteria need oxygen to grow. Others need no oxygen. Most bacteria that cause foodborne illnesses can grow either with or without oxygen.

Moisture: Bacteria need moisture to grow. Most *potentially hazardous foods* have a high amount of moisture. Because bacteria have no mouths, they get their nutrients dissolved in the water around them. High moisture foods are ideal for

bacterial growth. Dry foods, however, like uncooked beans and rice, become potentially hazardous when water is added.

The most important factors to control are temperature and time.

Four Important Bacteria and How to Control Them

Salmonella

Salmonella bacteria cause an infection of the intestinal tract. Symptoms include abdominal pain, headache, nausea, vomiting, fever, and diarrhea. Animals, raw animal foods (meat, eggs, raw milk, fish, etc.), and human beings (intestinal tract) can carry these bacteria.

Foods involved in the illness include poultry and poultry salads, meat and meat products, milk, shell eggs, egg custards and sauces, and other protein foods.

Preventive steps to avoid *Salmonella* infection are:

• Avoid cross-contamination.

• Refrigerate food, properly cool cooked meats and meat products.

• Avoid fecal contamination from food handlers by proper hand washing after using the toilet.

A Real Life Outbreak: The health department was notified that three patients in the hospital had abdominal cramps and diarrhea. All tested positive for *Salmonella.*

One of the patients worked as a cook in a local restaurant and the other two had eaten at the restaurant four days apart. After three days, seven more cases of illness were reported. Before it was over, twenty-five restaurant patrons became ill.

When asked, the employees described incomplete cooking practices. *Salmonella* was found in the roast beef, the cooked ham, the lettuce, and the coleslaw, as well as on the surface of a wooden cutting board.

Staphylococcus

These bacteria produce a toxin or poison. If the toxin is eaten in contaminated food, the illness can cause nausea, vomiting, diarrhea, and dehydration.

These bacteria are found in human beings (skin, nose, throat, infected sores), and animals. Foods involved are ham and other meats, warmed-over foods, dairy products, custards, potato salads, cream-filled pastries, and other protein foods.

Preventive steps to avoid illness include:

• Avoid contamination from bare hands.

• Keep food handlers with skin infections from food preparation.

• Refrigerate food properly, cool prepared foods rapidly.

A Real Life Outbreak: In May 1990, sixty-five elementary school children became ill after eating ham. Frozen, fully cooked ham rolls were delivered to the kitchen one week before the outbreak and placed in a refrigerator for thawing.

Two days before the ham was served, the fully thawed hams were cooked in a steamer until reaching an internal temperature of 180° F. The ham rolls were then allowed to cool for 45 minutes at room temperature so that the casings could be removed by hand.

Three employees removed the casings; none wore gloves. After all the casings were removed, the rolls were placed in deep pans (three rolls per pan, covered with aluminum foil) and stacked on the shelves of the refrigerator.

At 9 a.m. the next day, one day before the ham was served, the ham rolls were taken out of the refrigerator, sliced, and placed on cookie sheets and placed back into the refrigerator.

At 8:45 a.m. on the day the ham was served, the ham was placed in a 147° F oven to warm for 20 minutes.

At 9:15 a.m., the hams were placed in transport ovens for delivery. Four of the transport ovens maintained a temperature of 140° F and the other four transport ovens maintained temperatures between 109° and 122° F.

During the investigation of the outbreak, one of the food handlers tested positive for *Staphylococcus*.

Clostridium perfringens

These bacteria cause a mild illness with abdominal pain and diarrhea. The bacteria can be found in human beings (intestinal tract), animals, and soil.

Foods associated with *Clostridium perfringens* are cooked meat, poultry, gravy, and beans that have been cooled slowly.

Clostridium perfringens is a spore former. Spores can survive cooking. They can grow and multiply if the food is cooled too slowly.

Prevention methods include:

• Using careful time and temperature control in cooling and reheating cooked meat, poultry, and bean dishes.

• Reheating products to 165° F (73.9° C).

A Real Life Outbreak: Eighty-three people in Garland, Texas, became ill after eating beef brisket at a church banquet. The brisket had been cooked, allowed to cool at room temperature for 45 minutes, and then placed in bulk into the cooler.

The next day, the briskets were very slowly reheated in a warming cabinet with an estimated air temperature of 160° F. The brisket was then transported to the banquet at room temperature.

At the banquet, two warming pans heated with canned fuel were used as serving containers. Briskets waiting to be placed in the warming pans were left at room temperature.

E. coli 0157: H7

These bacteria can cause various symptoms including bloody diarrhea, severe abdominal cramps, nausea, vomiting, and with or without fever.

In children, the illness may progress to include hemolytic anemia, urinary infections, and kidney failure. Death can occur.

In the elderly, the nervous system may be involved, with seizures, coma, blood clots to the brain, and death.

Foods that have been contaminated with this bacteria include undercooked ground beef, raw milk, unpasteurized apple cider and salami.

People who have been infected with *E. coli 0157: H7* also can spread the disease to others by failing to their wash hands well after toilet use.

To control these bacteria:

• Cook hamburgers and other ground meat foods to the well-done stage.

Meat juices should be clear. Ground meat should reach a temperature of at least 155° F in foodservice operations.

- Keep ground meats in the refrigerator or freezer.
- Thaw in the refrigerator.
- Avoid contaminating other food with meat drippings.
- Wash hands thoroughly after contact with raw meat and after using the toilet.

A Real Life Outbreak: Four hundred seventy-five people became ill after eating undercooked Jack-in-the-Box hamburgers. Three children died.

As a result, Jack-in-the-Box has at least eight lawsuits against them, has lost an estimated $15 million in sales, and has been forced to layoff about 200 employees.

Searching for a Job or Career in Foodservice?

Exciting and *unlimiting* opportunities in:

- Hospitals
- Nursing Homes
- Schools
- Colleges and Universities
- Business and Industry
- Correctionals
- Restaurants
- Hotels
- Stadiums
- Convention Centers
- Supermarkets
- Casinos

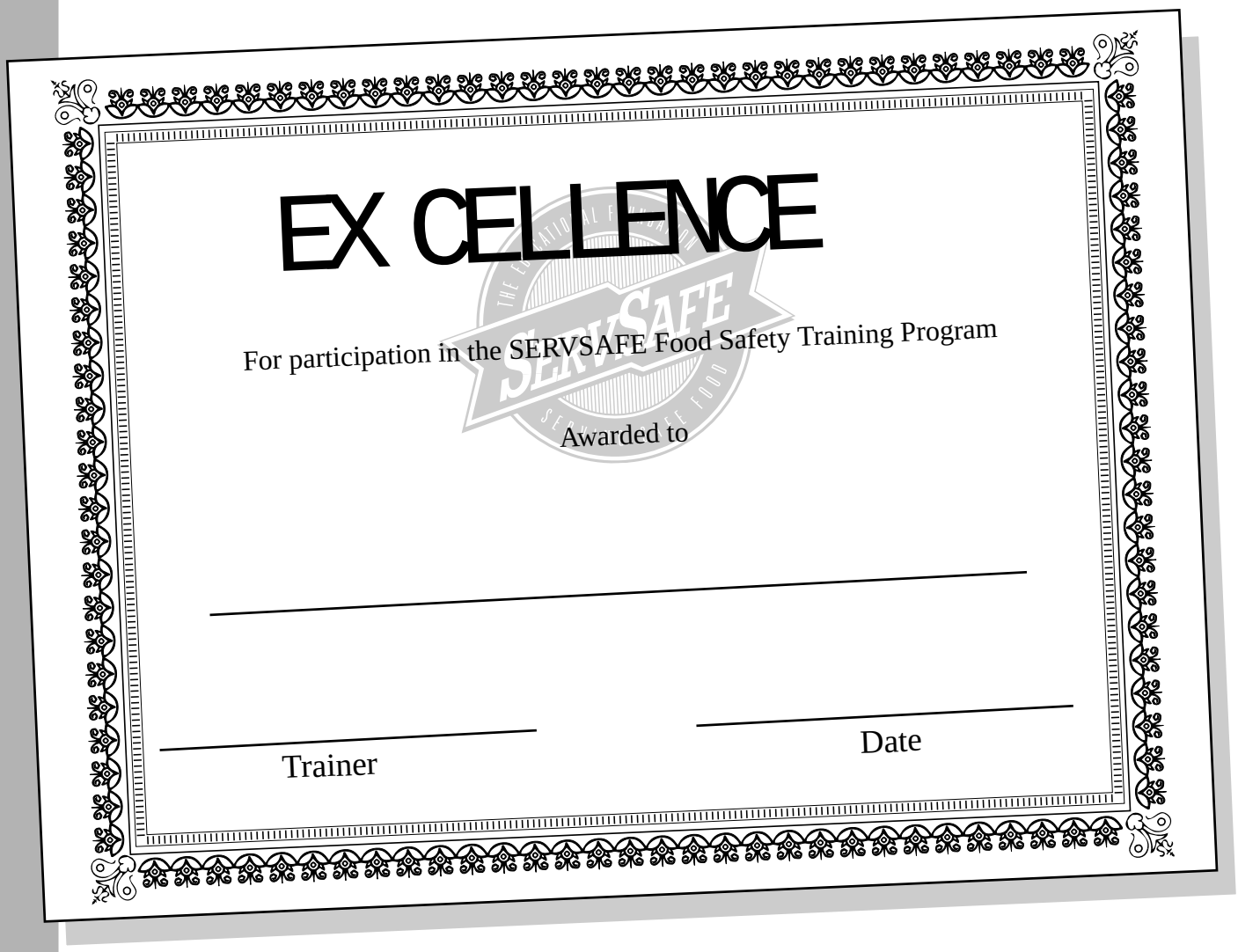
SERVSAFE Food Safety Training and JOB CLUB

can help you receive the job you want!

For more information call:

In cooperation with:
Kansas State University Cooperative Extension Service
and
Kansas Department of Social and Rehabilitation Services (SRS)
and
The Educational Foundation of the National Restaurant Association

Appendix D



Appendix E

FOOD SERVICE EMPLOYERS:

How would you like to hire an individual who has already had ***Food Safety*** and ***Job Retention Skills*** training?

In cooperation with:
Kansas State University Cooperative Extension Service, Manhattan, KS
and
Kansas Department of Social and Rehabilitation Services (SRS)
and
The Educational Foundation of the National Restaurant Association

Individuals in ***YOUR COMMUNITY*** are being trained in food safety and job retention skills.

Individuals receive 12 hours of **SERVSAFE** Food Safety and 20 hours of **Job Club** training.

After completing the SERVSAFE Food Safety Training, participants will know and understand:

- The importance of food safety
- Proper personal hygiene
- How to properly store food
- How to handle the preparation of safe food
- Cross-contamination and the danger zone
- Recent outbreaks of foodborne illness and what went wrong

The benefits participants will receive from Job Club are:

- Good work habits
- The importance of reliability
- Less absenteeism
- How to be responsible

Please contact:

Appendix F

Searching for a Job or Career in Foodservice?

KanWork Food Safety and Job Club Training Can Help

SERVSAFE TRAINING

SERVSAFE Food Safety Training is recognized as the leading food safety training program by foodservice employers. After completing this training program, you will have ***exciting and unlimiting*** career opportunities in:

- Hospitals
- Nursing Homes
- Schools
- Colleges and Universities
- Restaurants
- Hotels
- Stadiums and Convention Centers
- Night /Private Clubs
- Business and Industry
- Correctional Institutions
- Supermarkets
- Casinos

Dates:

Time:

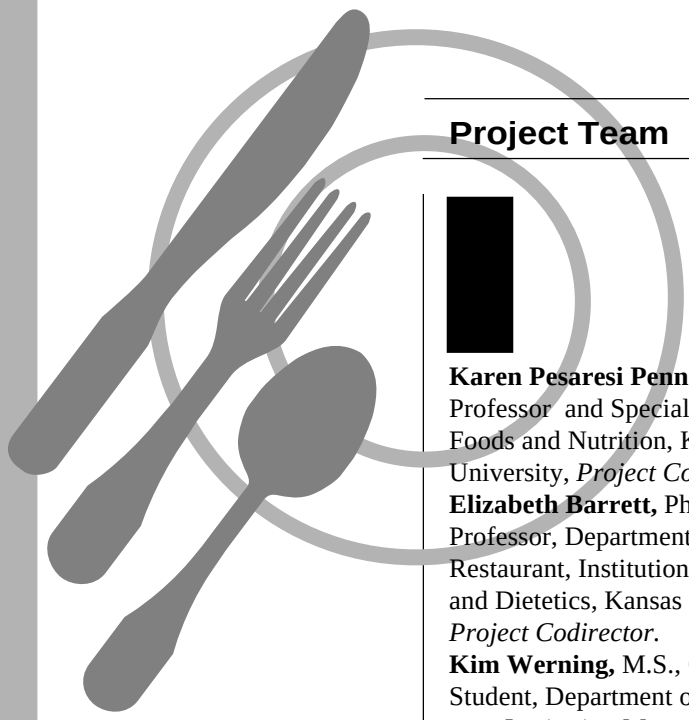
Place:

Conducted by:

JOB CLUB teaches you the skills you need to receive and keep the job you want.

Upon completion of the **SERVSAFE** Food Safety Training and **JOB CLUB**, you will receive a ***certificate*** that you can proudly show potential employers.

In cooperation with:
Kansas State University Cooperative Extension Service, Manhattan, KS
and
The Kansas Department of Social and Rehabilitation Services (SRS)
and
The Educational Foundation of the National Restaurant Association



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