

The North Central Region Center for FSMA Training, Extension,
and Technical Assistance

NCR FSMA 2023 Evaluation Report

Center impact and recommendations for improvement

February 2024

Executive Summary

The North Central Region Center for FSMA Training, Extension, and Technical Assistance (NCR FSMA) formed in 2016 with funding from the US Food and Drug Administration (FDA). The purpose of the center is to equip produce safety educators, professionals, and regulators from 12 midwestern states to help small- and mid-scale produce farmers and processors understand and comply with the Food Safety Modernization Act (FSMA).

After three years with funding from the FDA, the NCR FSMA was funded for three more years (NCR FSMA 2.0) by the United States Department of Agriculture (USDA) and was funded again for three years in September 2021 (NCR FSMA 3.0).

The center was evaluated in 2023 using six evaluation methods. The following are highlights of the evaluation results, organized by three questions:

1. What is going well with the NCR FSMA 3.0?

Serving partners

- NCR FSMA provides valuable opportunities for produce safety professionals to network with one another. Data collected from the annual meeting evaluation, fall professional development evaluation, and annual interviews support this finding.
- The NCR FSMA provides relevant information to food safety professionals.
- NCR FSMA listening sessions are well attended.
- Evaluating the impact of partners
- PSA training participants rated the training highly.
 - Nearly all (99.5 percent) respondents indicated the training was well organized, and 96.9 percent of respondents said the training location was convenient and comfortable.
 - The participants rated their instructors' abilities to answer questions and effectiveness at delivering the content highly, with average ratings of 4.56 and 4.53 respectively, on a scale from 1 to 5, where 5 equals strongly agree.

Evaluating the work of partners

- On-Farm Readiness Reviews offered by NCR FSMA partners have proven to be effective tools in helping farmers identify changes that need to be made and make them. Sixty-five percent of follow-up survey respondents who have participated in an OFRR indicated they made a change to practices or infrastructure because of what they learned.
- Remote delivery PSA trainings are proving to be a good option for reaching growers.
 - Respondents to the follow-up survey agreed they were able to get their questions answered during the remote delivery training (average rating of 4.39 on a 5-point scale), the remote delivery training was more accessible to them than a face-to-face training, because they did not have to travel (average rating of 4.39), and the remote delivery format was engaging (average rating of 4.16).

- The follow-up survey also showed remote delivery respondents made on-farm food safety practice changes at the same rate as those participating in face-to-face trainings. Eighty-four percent (64 of 76) of respondents who participated in a remote delivery training made a change to on-farm food safety practice since attending the training, similar to those who participated in face-to-face trainings (75 percent, 481 of 644). The difference was not statistically significant ($p=0.067$).

2. What impacts has the NCR FSMA had?

- Serving partners
- NCR FSMA partners intended to change behavior following NCR FSMA events.
 - Ten of 27 respondents to the annual conference survey indicated they intended to continue networking or collaborating with other NCR FSMA partners. Five respondents indicated they intended to work more closely with underserved audiences.
 - Fifteen respondents to the fall professional development survey answered the question regarding what they would do differently in their work as a result. Six intended to improve their outreach to diverse farmers, four intended to utilize resources that they learned about for the first time, and three intended to make changes to how they help growers with their water risk assessment.
- People's awareness of the importance of reaching out to underserved populations and how to potentially do that has increased by participating in the NCR FSMA.
 - The discussion about underserved communities during the 2023 annual meeting was the highest rated session of the conference. Five attendees indicated they planned to pursue more focused outreach to underserved communities in their state after attending the meeting.
 - As mentioned previously, six people who attended the fall professional development indicated they intended to increase or improve outreach to diverse farmers as a result.
 - During the annual interviews, interviewees explained that participating in NCR FSMA calls or events has helped them to be aware of how others are serving special populations and reminded them to reach out to underserved audiences.
- The NCR FSMA is helping people who are new to working in produce safety learn how to do their jobs.

Evaluating the impact of partners

- The follow-up survey conducted by the NCR FSMA found three in four farmers made a change to on-farm practice, infrastructure, or equipment to improve food safety since attending the training.

3. What more could the NCR FSMA do?

Recommendations based on evaluation findings related to the **NCR FSMA's work with partners** include:

- Include structured networking in future events, such as icebreakers, structured small group activities, or assigning people to eat at tables with others from different states or who have different roles from themselves. This can help those who are new integrate into the network.
- Continue to offer the fall professional development because respondents find it useful.
- Provide opportunities for food safety professionals to learn more about the realities of operating produce farms in the Midwest.
- Consider how the networking opportunities of the NCR FSMA might expand to include new audiences, such as farmers, Department of Health inspectors who inspect food establishments, organic inspectors, and GAP inspectors.
- Consider offering a brief orientation to new partners regarding what the NCR FSMA is and how it differs from the USDA NIFA.

Recommendations for **partners** include:

- Consider identifying farmers who have not yet identified their FSMA coverage status not only to help them identify their status, but also to offer additional technical assistance, if needed.
- Consider developing resources or highlighting stories of how farmers can make on-farm food safety practice, infrastructure, and/or equipment changes in no/low-cost ways.
- Share farm-based examples during trainings featuring a variety of types and sizes of farms.

Finally, **topics** that NCR FSMA partners are **interested in learning** more about include:

1. Aquaculture food safety issues,
2. The melon salmonella outbreak in Indiana,
3. Produce safety with mushrooms,
4. Why biosludge is used,
5. Dropped vs. drooped,
6. How backflow preventers look,
7. A glossary of terms,
8. Record keeping update,
9. Techniques to reduce stress and be more focused on solutions rather than problems,
10. Results of research funded by the Center for Produce Safety, and
11. Cottage food laws and how they differ by state.

This report was prepared by Arlene Enderton
Iowa State University Extension and Outreach
Farm, Food and Enterprise Development

Contact Information and Funding

For information regarding this report, please contact:

Arlene Enderton: arlene@iastate.edu

This work is supported by the Food Safety Outreach Program [grant no. 2021-70020-35732] from the USDA National Institute of Food and Agriculture.



North Central Region
Center for FSMA Training, Extension
and Technical Assistance

IOWA STATE UNIVERSITY
Extension and Outreach

In accordance with Federal law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, this institution is prohibited from discriminating on the basis of race, color, national origin, sex, age, disability, and reprisal or retaliation for prior civil rights activity. (Not all prohibited bases apply to all programs.) Program information may be made available in languages other than English. Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotape, and American Sign Language) should contact the responsible State or local Agency that administers the program or USDA's TARGET Center at 202-720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at 800-877-8339. To file a program discrimination complaint, a complainant should complete a Form AD-3027, USDA Program Discrimination Complaint Form, which can be obtained online at <https://www.ocio.usda.gov/document/ad-3027>, from any USDA office, by calling 866-632-9992, or by writing a letter addressed to USDA. The letter must contain the complainant's name, address, telephone number, and a written description of the alleged discriminatory action in sufficient detail to inform the Assistant Secretary for Civil Rights (ASCR) about the nature and date of an alleged civil rights violation. The completed AD-3027 form or letter must be submitted to USDA by: (1) Mail: U.S. Department of Agriculture Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW Washington, D.C. 20250-9410; or (2) Fax: 833-256-1665 or 202-690-7442; or (3) Email: program.intake@usda.gov. This institution is an equal opportunity provider. For the full non-discrimination statement or accommodation inquiries, go to www.extension.iastate.edu/diversity/ext.

Contents

Executive Summary.....	i
Contact Information and Funding.....	iv
Introduction.....	1
Methods.....	1
1. Produce Safety Alliance post-training evaluation, December 2022.....	1
2. Follow-up survey with Produce Safety Alliance Grower Training participants, January 2023	2
3. Annual conference evaluation survey, March 2023	3
4. Fall Professional Development evaluation survey, October 2023	3
5. Annual partner interviews, November-December 2023	3
6. Participant observation, continual.....	4
Results	4
1. What is going well with the NCR FSMA 3.0?.....	4
Serving partners	4
Evaluating the impact of partners.....	5
2. What impacts has the NCR FSMA had?	9
Serving partners	9
Evaluating the impact of partners.....	11
3. What more could the NCR FSMA do?	11
Conclusion.....	12
Works cited.....	13

Introduction

The North Central Region Center for FSMA Training, Extension, and Technical Assistance (NCR FSMA) formed in 2016 with funding from the US Food and Drug Administration (FDA). The purpose of the center is to equip produce safety educators, professionals, and regulators from 12 midwestern states to help small- and mid-scale produce farmers and processors understand and comply with the Food Safety Modernization Act (FSMA).

After three years with funding from the FDA, the NCR FSMA was funded for three more years (NCR FSMA 2.0) by the United States Department of Agriculture (USDA) and was funded again for three years in September 2021 (NCR FSMA 3.0).

Objectives of the NCR FSMA 3.0 include:

- Objective 1: Expand the produce safety network within the NCR to include underserved produce industry partners, more diverse producers, processors, and educators
- Objective 2: Collaborate with and support the NCR produce safety network
- Objective 3: Create, modify, and validate produce safety training materials based on a needs assessment, focusing on underserved and diverse production and processing environments and new educators
- Objective 4: Professional development and technical assistance of NCR produce safety educators, growers, and processors

Throughout the life of the NCR FSMA, evaluation has been used to measure its impact and receive continuous feedback to improve its work. This report shares highlights of evaluation results of the NCR FSMA 3.0 in 2023. It aims to answer four questions:

1. What is going well with the NCR FSMA 3.0?
2. What impacts has the NCR FSMA had?
3. What more could the NCR FSMA do?

Methods

In 2023, six evaluation methods were conducted, listed in chronological order.

1. Produce Safety Alliance post-training evaluation, December 2022

In December 2022, the NCR FSMA was given the opportunity to access data from the Produce Safety Alliance Grower Training course evaluation and analysis of the data was completed in 2023. This evaluation consists of a six-page survey completed by participants after completing the course. It includes ratings of each module as well as extensive demographic questions. Data was obtained from 194 trainings held in the North Central region between 11/1/2017 and 6/30/2021. Data was obtained only for courses for which the NCR FSMA had obtained permission from the lead trainer. The data set includes 3,425 responses. An infographic with North Central Region results can be found at:

https://www.ncrfsma.org/files/page/files/psa_evaluation_ncr_final.pdf

2. Follow-up survey with Produce Safety Alliance Grower Training participants, January 2023

The survey was first conducted in January 2018, sent to participants who took the course during the training season of 2016-17. The most recent survey was sent in January 2023, to participants who took the course during 2021-22. In total, partners from 11 states (all except Minnesota, who conduct their own survey) have participated in the survey, although not every state has participated in every year. The survey has followed up with participants from 318 trainings (although responses have not been received from all trainings).

Partners from each state sent invitations to participate in the survey to people who took the training in their state. The invitation was sent via email to those who use technology and on paper to those who do not use technology. The electronic survey was conducted using Qualtrics™. At least one reminder was sent to those who received the electronic invitation, and no reminder was sent to those who received paper invitations. The only variations were in Wisconsin in years 2-4 and North Dakota in year 4, when they sent a paper copy of the survey to all participants as well as an electronic invitation to those who use technology.

Table 1 shows the number of people invited to take the survey in each year and the number of responses received. The yearly response rate has ranged from 15 percent (year 6) to 26 percent (years 2 and 3). In total, 5,871 people were invited to take the survey and 1,337 responded. Therefore, the overall response rate is 23 percent, which is good for this type of survey.

Table 1: 1,337 people responded to the follow-up survey over the course of five years.

	# invited to take survey	# of responses	Response rate
Year 1 2016-17	781	141	18%
Year 2 2017-18	1,436	367	26%
Year 3 2018-19	1,426*	366*	26%
Year 4 2019-20	1,080	253	23%
Year 5 2020-21	766	152	20%
Year 6 2021-22	382	58	15%
TOTAL	5,871	1,337	23%

* does not include 60 responses collected by Iowa to their own survey in year 3.

The response rate to surveys distributed on paper (29 percent) was higher than the response rate to the electronic survey (20 percent). This may mean the sample is skewed to include a higher proportion of Plain clothes growers than participated in the training, because this population received paper copies of the survey only. (Year one is not included in paper versus electronic response rates, because whether responses were received electronically or on paper was not tracked.)

In two cases, partners shared data from the follow-up surveys that they had conducted themselves.

In the first instance, partners in Iowa surveyed training participants who had taken the course in the previous two years (the 2017-18 training season, and the 2018-19 training season). They sent their survey in November 2019. They shared raw, de-identified data, and their data was added to the year three regional dataset for a few questions that both surveys had in common. Iowa received 60 responses to that survey. These responses are not included in Table 1.

In the second case, Minnesota has conducted their own follow-up survey for three years, following up with participants from trainings starting in the 2017-18 training season (year 2) through 2019-20 (year 4). They shared aggregated results from four questions that were similar enough to the regional survey to be added to the regional results. They received 108 responses. The results were shared in aggregate, rather than raw data that could be added to the NCR FSMA dataset. It is not known how many invitations were sent for that survey. These responses are not included in Table 1.

Data was analyzed using descriptive statistics and t-tests using SPSS™ (version 26) software.

3. Annual conference evaluation survey, March 2023

The 2023 NCR FSMA annual conference was held in Eau Claire, Wisconsin, on March 15 and 16. Fifty-one people attended, including presenters and organizers. Attendees were asked to complete an evaluation survey prior to leaving on the second day.

Twenty-seven people completed the evaluation survey. Therefore, the response rate was 53 percent. This response rate appears to be low for this type of survey. To explain, some people needed to leave the conference early due to the weather, and, therefore, did not receive the evaluation form. In addition, guest speakers were included in the registration number, but were unlikely to complete the evaluation, because they did not attend the entire conference. Data was analyzed using Excel™ using descriptive statistics.

4. Fall Professional Development evaluation survey, October 2023

The North Central Region Center for FSMA Training, Extension, and Technical Assistance (NCR FSMA) offered its annual fall professional development on October 3-4. This event is geared towards Produce Safety Alliance trainers, produce inspectors, and state regulators. In total, 29 people attended the training.

The training was evaluated using a brief survey. Organizers invited participants to complete a brief online survey at the end of the event. An email was sent to participants as part of a follow-up email on Oct. 5. The survey was conducted using Qualtrics™. Twenty-five people completed the survey. Therefore, the response rate was 86 percent. Participants who chose to receive a \$5 gift card for participation in the survey were emailed an online code.

5. Annual partner interviews, November-December 2023

Each year the NCR FSMA evaluator conducts interviews with partners to measure the impact of the NCR FSMA and gather feedback on how it can be improved. In 2023, interviews were conducted for the eighth time.

A total of 16 states leads, state regulators, and FSOP awardees from the region were invited to participate in the interview process in 2023. Four (25 percent) responded to the invitation and were interviewed. Interviewees included two FSOP awardees, one inspector, and one state lead. Interviews were conducted

over Zoom™ in November and December 2023. Interviews were semi-structured, using a common interview template. Interviews were recorded and transcribed. Interviewees were promised confidentiality, meaning identifying information would not be associated with their responses and were informed that they could skip any question they did not want to answer. Interviews lasted approximately 25 minutes.

Data was coded using NVivo software. A topic was considered a theme if three of four interviewees mentioned it. Because of the small number of respondents, only a few themes emerged from the interviews. The results section describes those themes as well as some responses shared by only one or two people.

6. Participant observation, continual

The evaluator participated in monthly listening sessions and took extensive notes during the sessions, noting the level of participant engagement. She also received the monthly newsletters, participated in team lead, buyers' guide, and FDA quarterly meetings.

Results

The results section is organized with answer three questions:

1. What is going well with the NCR FSMA 3.0?
2. What impacts has the NCR had?
3. What more could the NCR FSMA do?

For the first two questions the answers are divided by data collected on the NCR FSMA's service to partners and the NCR FSMA's evaluation of those partners' work.

1. What is going well with the NCR FSMA 3.0?

Serving partners

NCR FSMA provides valuable opportunities for produce safety professionals to network with one another.

The 2023 annual meeting evaluation showed that attendees felt closer to other partners because of attending the meeting. On average, they rated the statement, "I feel closer to other NCR FSMA partners because of attending this annual meeting" with an average rating of 4.31 on a scale from 1 to 5, where 5 = strongly agree and 1 = strongly disagree. The ability to network was one of the primary reasons for holding the event face-to-face, as opposed to virtually. Similarly, the most common action participants intended to take following the conference was to continue networking or collaborating with others in the NCR FSMA network.

Using the same scale as was used for the annual meeting, participants in the fall professional development rated the statement, "I strengthened relationships with other professionals during the event," with an average rating of 4.48. They rated the statement, "The relationships I built during the event will improve my work," with an average rating of 4.46. These ratings add additional evidence that the NCR FSMA has provided opportunities for relationship building among produce safety professionals.

Similarly, networking has emerged year after year from annual interviews as the top benefit of being a part of the NCR FSMA network. In 2023, all interviewees mentioned the NCR FSMA's role in providing networking opportunities. One interviewee said, "One thing I got out of going to these different meetings is [learning about] a lot of technical assistance groups I didn't know existed." Another said, "I just appreciate building those connections with other people. If I do have questions, or if I do have an interesting technical situation [...] knowing who to contact or who may have experience with different types of situations [has been beneficial]." Being a part of the NCR FSMA network has helped interviewees to better prepare to conduct inspections and refer clients or colleagues to other organizations and has increased awareness of who else is working in produce safety.

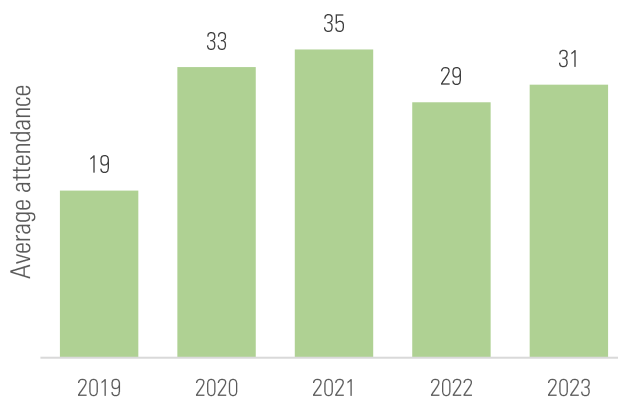
The NCR FSMA provides relevant information to food safety professionals.

The fall professional development evaluation survey asked participants to rate their agreement with the statement, "I learned information that I can directly apply to my work," using the same scale previously described. On average, they rated the statement at 4.44.

NCR FSMA listening sessions are well attended.

Figure 1 shows the average attendance at NCR FSMA monthly listening sessions from 2019 through 2023. There was a large increase in attendance from 2019 to 2020, possibly because NCR FSMA partners began working from home in March 2020 due to the pandemic. High participation in listening sessions has been maintained since 2020, which may indicate partners find value in the sessions.

Figure 1: Average attendance at monthly listening sessions increased dramatically in 2020 and has been maintained.



Evaluating the impact of partners

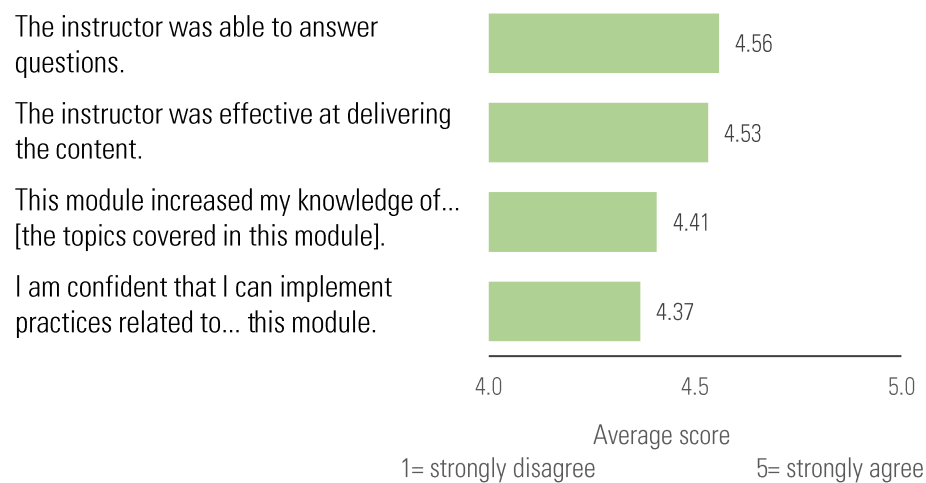
PSA training participants rated the training highly.

Data gathered through the PSA evaluation and shared with the NCR FSMA showed that participants have given positive ratings to the training. Nearly all (99.5 percent) respondents indicated the training was well organized, and 96.9 percent of respondents said the training location was convenient and comfortable. These results reflect well on the trainers in the North Central Region.

Figure 2 shows the average rating to four composite variables measuring a) the instructors' ability to answer questions, b) the instructors' effectiveness at delivering the content, c) the participants' self-rating of their increase in knowledge, and d) the participants' confidence that they can implement practices related to each module. The participants rated their instructors' abilities to answer questions and effectiveness at delivering the content highly, with average ratings of 4.56 and 4.53 respectively, on a scale from 1 to 5, where 5 equals strongly agree.

In addition to the excellent work the PSA does to train PSA trainers and offer ongoing support to them, the NCR FSMA has offered a fall professional development for PSA trainers since 2018, which offers a deeper dive into some of the topics covered in the PSA training. The NCR FSMA also provides opportunities for networking and learning for PSA trainers. The aforementioned data regarding trainer effectiveness shows the NCR FSMA is contributing to maintaining a qualified cohort of PSA trainers in the NCR.

Figure 2: PSA participants' ratings of their instructors were high.



On-Farm Readiness Reviews offered by NCR FSMA partners have proven to be effective tools in helping farmers identify changes that need to be made and make them.

While few follow-up survey respondents have participated in an OFRR, the majority of those who have participated made changes on their farm as a result.

Nineteen percent of farm respondents to the follow-up survey indicated they have participated in an OFRR (Figure 3). These reviews are intended to prepare farmers for inspection by conducting an on-farm visit during which food safety professionals identify practices or infrastructure that could be improved.

Sixty-five percent of respondents who have participated in an OFRR indicated they made a change to practices or infrastructure as a result of what they learned, demonstrating that OFRRs are effective at helping growers make on-farm changes (Figure 4). Therefore, NCR FSMA partners should continue to offer OFRRs to the extent possible.

Figure 3: 19% of farm respondents have participated in an OFRR.
(of 658 respondents)

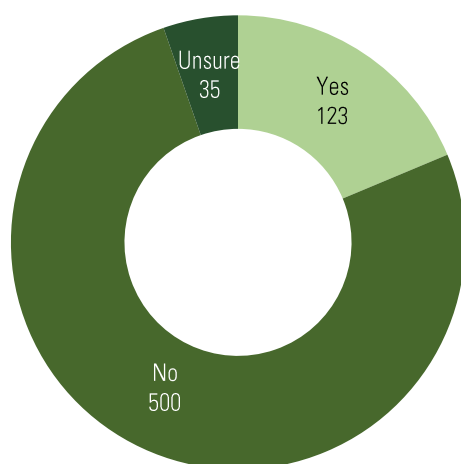
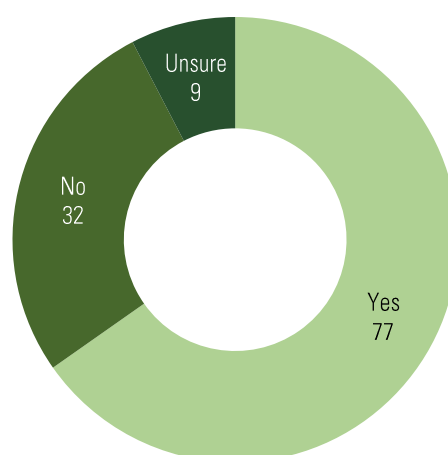


Figure 4: 65% of OFRR participants made a change based on what they learned during the review.
(of 118 respondents)



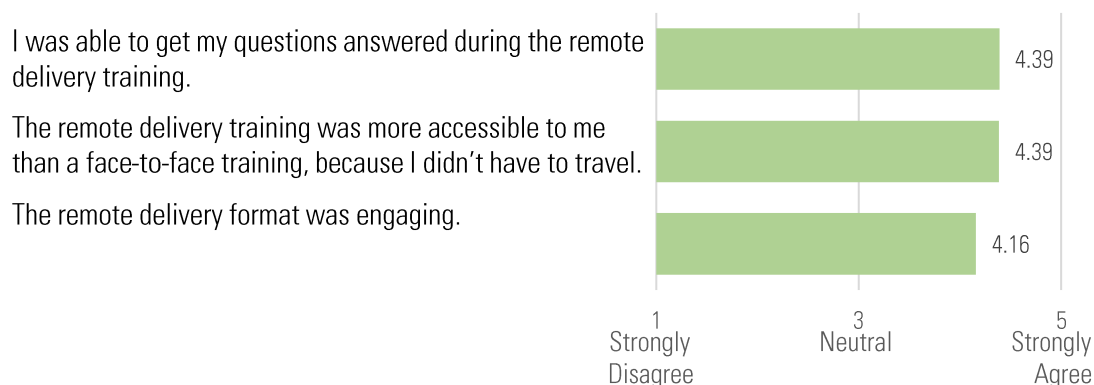
Remote delivery trainings are proving to be a good option for reaching growers with the PSA training.

During the COVID-19 pandemic, the Produce Safety Alliance allowed the training to be taught using remote delivery. Originally this policy was temporary. In 2023, the policy was made permanent, because evidence showed the remote delivery training was as effective as in-person training (Bugingo et al., 2023).

The follow-up survey collected in the North Central region also supports this decision. It asked three questions related to the experience of remote delivery participants (Figure 5). Respondents agreed they were able to get their questions answered during the remote delivery training (average rating of 4.39 on a 5-point scale). Participants also agreed the remote delivery training was more accessible to them than a face-to-face training, because they did not have to travel (average rating of 4.39 on a 5-point scale).

Participants also agreed that the remote delivery format was engaging (average rating of 4.16 on a 5-point scale). Maintaining engagement in a day long course is challenging even in face-to-face trainings, but is especially difficult when participants are in the midst of the distractions of home and lacking personal connection with the trainer and other participants.

**Figure 5: Remote delivery trainings received high ratings.
(88 respondents)**



The follow-up survey also showed remote delivery respondents made on-farm food safety practice changes at the same rate as those participating in face-to-face trainings. Eighty-four percent (64 of 76) of respondents who participated in a remote delivery training made a change to on-farm food safety practice since attending the training, similar to those who participated in face-to-face trainings (75 percent, 481 of 644). The difference was not statistically significant ($p=0.067$). (Plain clothes growers were removed from the analysis, because they do not participate in remote delivery trainings.)

Using open-ended questions, 22 participants gave feedback or suggestions for future remote delivery trainings. Thirteen respondents indicated the training was good, especially given the limitations of remote delivery. One said, "The remote delivery was very good. Everyone participated and I personally got a lot out of the course, just as if I were face-to-face. Don't get me wrong, I prefer face-to-face, but this was good." While three respondents indicated they would prefer a face-to-face training, others prefer the remote training. For example, one said, "I have taken the PSA grower training twice in the past six years to brush up on the rules/changes. The first one was taken at a facility and the second one I took remotely. I preferred the remote one; it was more convenient to attend. I didn't have to worry about driving the distance and the weather."

The remote delivery course was difficult to access for some respondents, because of lack of high-speed internet where they live. One described traveling to a friend's house eight miles away to use the high-speed connection and another went to the local extension office. On the other hand, two indicated they appreciated that they did not have to travel for the training, because they were able to access it from home.

2. What impacts has the NCR FSMA had?

Serving partners

NCR FSMA partners have intended to change behavior following NCR FSMA events.

When asked what they intend to do differently in their work as a result of the **annual conference**, ten survey respondents indicated they intended to continue networking or collaborating with other NCR FSMA partners, making this the most common theme. For example, one respondent wrote, “Even more cross state/regional collaboration.” (Eighteen respondents answered this question.)

Five respondents indicated they intend to work more closely with underserved audiences. Three of these respondents specifically intend to reach out to Plainclothes growers.

Other themes that emerged included:

- two respondents will use resources highlighted during the conference,
- two intend to listen more closely to producers’ concerns,
- two intend to offer more trainings or different trainings, and
- two described using a new or different approach in their work. For example, one said, “Approach with the sugar approach more than a stick.”

Fifteen respondents answered the question regarding what they will do differently in their work as a result of attending the **fall professional development**. The following summarizes their responses:

- Six people mentioned that they will improve or increase outreach to diverse farmers.
- Four people learned about new resources they can provide to growers.
- Three specifically mentioned the water risk assessment.
- Other ideas were only mentioned once.

People’s awareness of the importance of reaching out to underserved populations and how to potentially do that has increased by participating in the NCR FSMA.

The discussion about underserved communities during the 2023 annual meeting was the highest rated session of the conference. This session included a presentation from Annalisa Hultberg about working with Hmong and other minority farmers in Minnesota and LaVern Zeiset, a Mennonite grower who shared tips on reaching Plainclothes growers.

These two talks were followed by an open time for discussion. During the discussion time it was brought to attention that a First Nation grower in attendance felt the conference agenda overlooked Native Americans. While this discussion may have been uncomfortable for some, conference attendees overall found this session extremely useful. One wrote, “I really enjoyed discussion of tribal representation and sovereignty.” Five attendees indicated they plan to pursue more focused outreach to underserved communities in their state as a result of attending the meeting. Three of these respondents specifically intend to reach out to Plainclothes growers.

As mentioned previously, six people who attended the fall professional development indicated they intended to increase or improve outreach to diverse farmers as a result.

During the annual interviews, interviewees were asked what the NCR FSMA has done to help them reach underserved audiences who they work with. Interviewees explained that participating in NCR FSMA calls or events has helped them to be aware of how others are serving special populations. This information has been a reminder to reach out to underserved audiences, as well as made interviewees aware of resources that are available if opportunities open with these populations.

The NCR FSMA is helping people who are new to working in produce safety learn how to do their jobs.

The fall professional development survey showed that of the 24 respondents who answered that question, eight (32 percent) have worked in produce safety for two years or less (Figure 6). Six respondents (25 percent) have worked in produce safety between three and five years; four respondents (17 percent) have worked in produce safety between six and eight years; and six respondents (25 percent) for 9 or more years. The FSMA Produce Safety Rule went into effect in January 2016. Most respondents (75 percent) began working in produce safety after the FSMA PSR went into effect, having worked in produce safety for 8 years or fewer.

Results are similar to results from the 2022 fall professional development, when 7 of 12 respondents had been working in produce safety for two years or less. These surveys show that people new to working in produce safety look to the NCR FSMA for professional development.

One interviewee in 2023 shared how being a part of the NCR FSMA network helped him/her learn how to do his/her job, “I felt like NCR was really critical in getting me up to speed and introduced me to colleagues that I don't have in office, specifically here, to be able to ask questions or bounce ideas off of.” Possibly because of the high turnover in all professions that occurred in the years following the start COVID-19, the theme that the NCR FSMA helps people who are new to produce safety learn how to do their jobs emerged for the first time during the 2022 annual interviews. This was an anticipated impact of the center that has carried into 2023.

Figure 6: The participants had a variety of years of experience in produce safety.



Evaluating the impact of partners

The behavior change/follow-up survey conducted by the NCR FSMA found three in four farmers made a change to on-farm practice, infrastructure, or equipment to improve food safety since attending the training.

The survey asked about two categories of changes that farms might have made since taking the training. The first was changes to food safety practices and the second was changes to on-farm infrastructure and equipment.

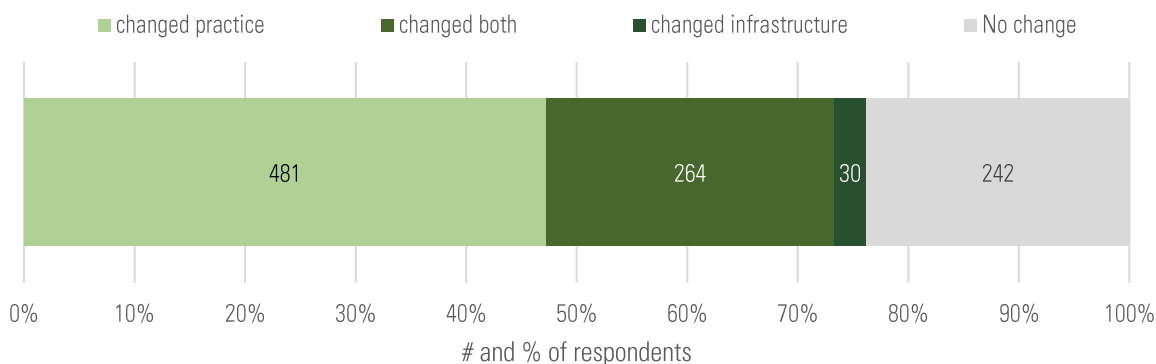
When the two categories of change are combined, 77 percent of respondents made some sort of change since attending the PSA grower training. (This does not include Minnesota data.) Figure 7 shows that 47 percent made a change to practice only; 26 percent of respondents made a change to food safety practice *and* infrastructure or equipment; and 3 percent made a change to infrastructure only. (These percentages do not add to 77 percent due to rounding.)

It may go without saying that practice changes were made at a higher rate than infrastructure changes, likely because infrastructure changes can be prohibitively expensive. It is possible that some growers wait to make infrastructure changes to improve food safety as they grow their businesses.

“There is much more to be done as I begin to actually sell to the public. I don't have a pack house or station set up yet, but knowing what features are needed for ideal food safety will make the initial build much better.”

~Kansas farmer

Figure 7: Approximately 3 of 4 growers made a change to food safety practices and/or infrastructure.



3. What more could the NCR FSMA do?

Several evaluation methods asked participants to share recommendations for improvement or topics they would like to learn more about at NCR FSMA meetings or events. In addition, the evaluator crafts

Recommendations based on evaluation findings related to the **NCR FSMA's work with partners** include:

- Include structured networking in future events, such as icebreakers, structured small group activities, or assigning people to eat at tables with others from different states or who have different roles from themselves. This can help those who are new integrate into the network.
- Continue to offer the fall professional development because respondents find it useful.
- Provide opportunities for food safety professionals to learn more about the realities of operating produce farms in the Midwest.
- Consider how the networking opportunities of the NCR FSMA might expand to include new audiences, such as farmers, Department of Health inspectors who inspect food establishments, organic inspectors, and GAP inspectors.
- Consider offering a brief orientation to new partners regarding what the NCR FSMA is and how it differs from the USDA NIFA.

Recommendations for **partners** include:

- Consider identifying farmers who have not yet identified their FSMA coverage status not only to help them identify their status, but also to offer additional technical assistance, if needed.
- Consider developing resources or highlighting stories of how farmers can make on-farm food safety practice, infrastructure, and/or equipment changes in no/low-cost ways.
- Share farm-based examples during trainings featuring a variety of types and sizes of farms.

Finally, **topics** that NCR FSMA partners are **interested in learning** more about include:

- Aquaculture food safety issues,
- The melon salmonella outbreak in Indiana,
- Produce safety with mushrooms,
- Why biosludge is used,
- Dropped vs. drooped,
- How backflow preventers look,
- A glossary of terms,
- Record keeping update,
- Techniques to reduce stress and be more focused on solutions rather than problems,
- Results of research funded by the Center for Produce Safety, and
- Cottage food laws and how they differ by state.

Conclusion

The NCR FSMA's greatest impact continues to be its support of a network of produce safety professionals. The NCR FSMA has provided opportunities for these professionals to stay up-to-date with the Food Safety Modernization Act, reduce duplication of efforts by using one another's resources, and even learn how to do their jobs. The NCR FSMA is one of the supports that helps maintain a cadre of competent produce safety educators in the north central region. NCR FSMA has also helped raise partners' awareness of the importance of working with special populations and has provided opportunities to share best practices for doing so.

The NCR FSMA can build on its strengths by continuing to offer professional development and networking opportunities to its partners, while potentially expanding to include new partners.

Works cited

Bugingo, C., Stoeckel, D., Clements, D., George, L., Saunders, T., Blasini, D., Humiston, M., Melville, T.,

Way, R., Acuna-Maldonado, L., & Bihn, E. A. (2023). *Remote PSA Grower Training Delivery Policy:*

Lessons Learned and Recommendations for Future Courses.