





Expansion of the Sanitary and Phytosanitary Distance Learning Program

A partnership between the U.S. Department of Agriculture (USDA) and the Agency for International Development (USAID) to develop and share online training modules on sanitary and phytosanitary standards (SPS) concepts across plant health, animal health, and food safety with the international community.

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Executive Summary

This is a final program summary of the Expansion of the Sanitary and Phytosanitary Standards (SPS) Distance Learning Program implemented by the United States Agency for International Development (USAID), the United States Department of Agriculture (USDA), and Texas A&M University (TAMU). The program was conducted September 2021 to September 2022 by the Center for Educational Technologies (CET) at TAMU. In 2021, after reviewing the impact that the original SPS Distance Learning Program had on the greater international community, United States Agency for International Development (USAID) and USDA, viewed the SPS Distance Learning Program as a capacity-building toolkit that could be further disseminated, components translated to reach larger audiences, and the platform enhanced to ensure accessibility across diverse populations. The interagency partnership decided to improve upon existing programmatic material by creating a leaner, revised version of the SPS Agreement module and through translating the newest Animal Health and Food Safety modules. New modules, workshops, and knowledge management content were developed as part of this one-year effort that involved collaboration across multiple USDA agencies including, the USDA-FSN team, USDA-APHIS, USAID, and FDA. This effort included resources for translation of key modules into Russian and Spanish, the revision of an existing module, and the revision of a portion of the existing SPS Distance Learning Program to further support accessibility of content to all learners.

Knowledge management was also a component of this program with the development of a blog and promotional video highlighting the journey of the SPS Distance Learning program and its evolution over the past 10 years. The SPS training program continues to support a blended learning approach. The existing program contains over 185 hours of content, including 27 computer-based modules and 10 workshops. Program participants acquired the essential skills needed to collect and analyze data and to formulate effective policies to increase productivity and expand markets. More information about the program can be found at <u>TAMUCET.org</u>.

Deliverables

The list immediately below briefly outlines the deliverables tasked and completed during the duration of this program. Each deliverable will be discussed more comprehensively in the following section.

- I. Translation of existing Animal Health Module to Russian as a SCORM 2004-compliant online course suitable for deployment on the SPSCourses.com platform.
- 2. Translation of existing Animal Health Workshop to Russian, including all accompanying resources such as Facilitator's Guide, PowerPoint presentations, handouts and activity worksheets.
- 3. Translation of existing Animal Health Workshop to Spanish, including all accompanying resources such as Facilitator's Guide, PowerPoint presentations, handouts and activity worksheets.
- 4. Translation of existing Food Safety Module to Spanish as a SCORM 2004-compliant online course suitable for deployment on the SPSCourses.com platform.
- 5. Translation of existing Food Safety Workshop to Spanish, including all accompanying resources such as Facilitator's Guide, PowerPoint presentations, handouts and activity worksheets.
- 6. Development of a condensed version of the existing SPS Agreement Module as a SCORM 2004-compliant online course suitable for deployment on the SPSCourses.com platform.
- 7. Co-Host and Serve as Technical Support for the Asia-Pacific Economic Cooperation Awareness Webinar Series Phase III Virtual-Lab Training with FDA and North Carolina State University.
- 8. Revision of text content in the Spanish Post-Harvest Handling Modules in preparation for graphic/design revisions and final deployment of modules on the SPSCourses.com platform.
- 9. Review and update accessibility features across the Inspections, Pest Surveillance, Plant Pest Identification Systems, and SPS Course Review modules in English.
- 10. Provide knowledge management and communication services.

Deliverables In-Depth

DELIVERABLE

Translation of existing Animal Health Module to Russian as a SCORM 2004-compliant online course suitable for deployment on the SPSCourses.com platform.

Leveraging a state-of-the-art authoring platform, the Animal Health module highlights historical and recent animal disease events from around the globe and supports foundational learning ideas including: The Value of a Modern Surveillance and Emergency Response Process; International Trade and Animal Health; Import Risk Analysis; Risk Management and Risk Communication; and Emergency Preparedness and Response. To conclude the module, learners embark on a case study where they walk through the surveillance and emergency response process during an African Swine Fever outbreak scenario, and are asked questions along the way to see if they can correctly identify next steps and best practices to implement. With the knowledge gained from this learning module, countries gain further insight into the development and implementation of modern animal disease surveillance and emergency response systems.

In June 2021, the USDA requested that the Animal Health Module be translated into Russian. The USDA team identified Tatyana Sedova to serve as the Russian language expert and narration talent for the translated module. Texas A&M began the translation process by working with their third-party translation vendor Blend to translate all of the existing Animal Health Module content into Russian. Once the initial translation was generated, Texas A&M updated the existing online module player to reflect and support the Russian language. Ms. Sedova recorded all video narration in Russian, and her voice was dubbed over the video graphics to create a translated copy of all module videos. These videos were applied to the module and a full draft of the module was reviewed by Ms. Sedova. After multiple reviews, the Animal Health Module in Russian was released to the public in March 2022.



Translation of existing Animal Health Workshop to Russian, including all accompanying resources such as Facilitator's Guide, PowerPoint presentations, handouts and activity worksheets.

In June 2022, Texas A&M identified a new Russian language expert, Prime Translate, to assist in the translation of the existing Animal Health Workshop to Russian. The Animal Health Workshop consists of a Facilitator's Guide, Participant's Guide, Powerpoint presentations, handouts, and supplemental resources needed to carry out a 2-3 day in-person or online workshop that aligns with the foundational content within the Animal Health Module. Texas A&M worked with their third-party translation vendor Blend to provide an initial translation of the existing Animal Health Workshop. With assistance from Prime Translate serving as both translator and editor, Texas A&M released the Animal Health Workshop in Russian to SPSCourses.com in September 2022.

Russian Facilitator's Guide Animal Health An Introduction to Disease Surveillance, Risk Assessment and Emergency Preparedness nd Response **Cample Sca** NINAL MEALTH WORKSHOP Activity 7 Understanding the Pathway(s) to a Disease Outbreak Using Scenario Trees 10 10 Занятие 7 Охрана здоровья животн Понимание пути(-ей) к вспышке болезни с ие в эпиднадзор за болезн использова ем дерен ьев сценар определение риска, готовность к чрезвь ситуациям и реагирование на них руководство для New treate a scenario tree for the OEE listed discuss. The mesodity to use in the scenario tree (e.g., live animals, ort out their findings to the class if time allows. At each bin DORCO/D DORCO/D DORCO/D

English Facilitator's Guide

Translation of existing Animal Health Workshop to Spanish, including all accompanying resources such as Facilitator's Guide, PowerPoint presentations, handouts and activity worksheet.

In November 2021, Texas A&M worked with their third-party translation vendor Blend to provide an initial translation of the existing Animal Health Workshop in Spanish. With assistance from a local Spanish expert serving as both translator and editor, Texas A&M released the Animal Health Workshop in Spanish to SPSCourses.com for use by the USDA team in February 2022.



Spanish Animal Health Workshop presentation slides



Translation of existing Food Safety Module to Spanish as a SCORM 2004-compliant online course suitable for deployment on the SPSCourses.com platform.

The Food Safety Module discusses the high-need training areas of International Food Safety standards and Codex Alimentarius; Overviews of food safety policy setting, regulations, and monitoring; Key concepts in a food safety system, including risk assessment, risk mitigation, hazard analysis, certificates, audits, inspections, testing, communication and education, and roles of government officials and private sector representatives (complexities of food safety regulatory environment); Equivalence; TBT issues (Quality standards, labeling requirements, etc); and Roles of official regulations and private standards. The module highlights all of the key training areas noted above and concludes with a case study that places learners in the shoes of a fictional country who is just beginning the modernization process for their existing food control system. With the knowledge gained from this learning module, countries gain further insight into the development and implementation of a modern, national food control/safety system. Further, it equips them with the knowledge necessary to initiate conversations and begin taking steps forward and encourage progress towards food security.

After the release of the Food Safety Module to the public in March 2021, the USDA also requested that the module be translated into Spanish and made available to all SPSCourses.com learners. Texas A&M identified a local Spanish language expert to serve as the main reviewer and narration talent for the translated module. Texas A&M began the translation process by working with their third-party translation vendor Blend to translate all of the existing Food Safety Module content into Spanish. The local Spanish language expert recorded all video narration in Spanish, and her voice was dubbed over the video graphics to create a translated copy of all module videos. These videos were applied to the module and a full draft of the module complete. In the final review cycle, the USDA recommended updating the existing translation of the term, "Food Safety" and a few other key phrases to reflect the Spanish translation most widely used by the existing learner population. After updates to the translation were made and additional reviews, the Food Safety Module in Spanish was released to the public in August 2022.



DELIVERABLE

Translation of existing Food Safety Workshop to Spanish, including all accompanying resources such as Facilitator's Guide, PowerPoint presentations, handouts and activity worksheets.

In January 2022, Texas A&M continued their collaboration with the existing Spanish language expert to assist in the translation of the Food Safety Workshop to Spanish. The Food Safety Workshop consists of a Facilitator's Guide, Participant's Guide, Powerpoint presentations, handouts, and supplemental resources needed to carry out a 2-3 day inperson or online workshop that aligns with the foundational content within the Food Safety Module. Texas A&M worked with their third-party translation vendor Blend to provide an initial translation of the existing Food Safety Workshop. With assistance from the local Spanish language expert, serving as both translator and editor, Texas A&M uploaded the Food Safety Workshop in Spanish to SPSCourses.com for use by the USDA team in August 2022.

Spanish Food Safety Workshop Participant Guide	TALLER SOBRE INOCUIDAD DE ALMENTOS Actividad 7	es publica Missign del APPCC
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Spanish Food Safety Workshop presentation slides



Development of a condensed version of the existing SPS Agreement Module as a SCORM 2004-compliant online course suitable for deployment on the SPSCourses.com platform.

In 2017, the original Plant Health - SPS Agreement online module was released to the public on SPSCourses.com. Consisting of over 4 hours of contact time, the module focused on the following 5 learning objectives: 1) Describe the key historical events that led to the creation of the World Trade Organization (WTO) and the Agreement on the Application of Sanitary and Phytosanitary Measures; 2) Describe what types of measures the SPS Agreement covers; 3) List the basic rights and key concepts included in the SPS Agreement; 4) Explain how one country, the United States, implements the SPS Agreement; and 5) Name three standard-setting organizations that are included in the SPS Agreement. This content-rich module was popular for its topic, but was often left incomplete by learners who became overwhelmed by the amount of time required to finish the module. As a result, the USDA determined that it was important to develop a 2nd edition of the module that slims down the original modules, focuses on key ideas, and decreases the module contact time to 1.5 hours. To assist Texas A&M in this revision process, the USDA identified Lottie Erickson, one of the original authors of the Plant Health modules serve as reviewer and editor.

In addition to editing and revising the original SPS Agreement module content, Mrs. Erickson also assisted in revising the module's pre- and post-assessment to reflect the content covered within the new edition. After approving the final content, Texas A&M produced the newest version of the module within the online authoring tool, StepStone and updated all graphics and PDFs to ensure their readability and alignment with the revised content. After signoff, the module was packaged as a SCORM and placed within SPSCourses.com. In partnership with the USDA, Texas A&M structured SPSCourses.com to allow learners access to both the original and 2nd edition of the SPS Agreement module. With many learners already having earned a certificate through the original module, the USDA wanted to ensure continued access to the original content. Through this new structure, learners can choose which version of the module to engage with. The 2nd edition of the SPS Agreement Module was made publicly available via SPSCourses.com at the end of September 2022.



Co-Host and Serve as Technical Support for the Asia-Pacific Economic Cooperation Awareness Webinar Series Phase III - Virtual-Lab Training with FDA and North Carolina State University.

The USDA FSN Team, FDA, and North Carolina State University in partnership with Texas A&M hosted the Asia-Pacific Economic Cooperation Awareness Webinar Series Phase III in 2022. The AWARENESS WEBINAR SERIES: APEC FSCF PTIN Workshop for Food Safety Experts and Policymakers -- Whole Genome Sequencing (WGS): Laboratory Capacity Building of Environmental Testing for Foodborne Pathogens: Virtual In-Laboratory Training event was the third Phase of an ongoing WGS workstream being executed under the auspices of the APEC FSCF PTIN. In cooperation with North Carolina State University and Texas A&M University, through the Food Safety Network (FSN – a tri-agency agreement between the U.S. Food and Drug Administration, the U.S. Department of Agriculture's Foreign Agricultural Service, and the U.S.Agency for International Development), and with the endorsement of the APEC FSCF, two back-to-back virtual in-lab trainings were held as Phase 3 of the WGS multi-year workstream for participants from APEC travel-eligible economies. The trainings consisted of virtual classroom-style and in-laboratory components designed to provide an introduction to microbial criteria, tiered testing approaches, and WGS methodology and the resulting data analysis necessary to interpret and act on WGS results. Sessions were included that focused on mitigation strategies, data sharing, and records-keeping. Commodities were selected based on regional relevance, and innovative methodology was implemented. A primary focus of the workshop stressed the importance of incorporating new technologies intelligently and efficiently, and emphasis was placed on identifying current projects, networks, and informational resources in and/ or available to APEC economies.

The Phase 3 Virtual In-Lab Trainings were held August 8-11, 2022, beginning at 9am UTC-05 (Washington, D.C.) for economies in the Western Hemisphere, and August 15-18, 2022 beginning at 9am UTC+08 (Beijing) for economies in the Eastern Hemisphere. The content of these two events were identical, with the course being repeated to accommodate participant work days in the Western and Eastern Hemispheres. Recordings from this series can be accessed at SPSCourses.com.



Revision of text content in the Spanish Post-Harvest Handling Modules in preparation for graphic/design revisions and final deployment of modules on the SPSCourses.com platform.

In 2021, Texas A&M digitized the post-harvest handling guidance for Food Safety Modernization Act (FSMA), to enable our partners at the Universidad del Valle de Guatemala (UVG) to deliver their training in a similar capacity to that of the successful SPS Distance Learning program. The Texas A&M team was provided with a PDF copy of a Post Harvest Handling Manual, developed by UVG that they wanted to transform into a series of self-paced online learning modules. Each of the 10 chapters of the manual were rebuilt and a course site created for these modules within SPSCourses. com. Within this course, learners can earn a certificate of completion for each chapter upon achieving a passing score of the module post-assessment and completion of a short feedback survey. The training was made available on SPScourses.com for pilot testing within the LAC region to determine additional revisions or changes needed to the content. In September 2022, the Texas A&M team received all suggested module content revisions from UVG. Texas A&M was able to successfully apply all module revisions to the first nine chapters, with the 10th chapter removed upon recommendation. The modules are prepped for the application of image and figure revisions. Once the images and figures have been replaced, the modules will be ready for publishing and can be released to the public on the SPSCourses.com platform.



Review and update accessibility features across the Inspections, Pest Surveillance, Plant Pest Identification Systems, and SPS Course Review modules in English.

In late 2020, Texas A&M collaborated with the USDA Section 508 Coordination Team to review 508 accessibility across all site and module content on SPSCourses.com. At the conclusion of the meeting and after a few months of research, Texas A&M developed a plan to target ADA accessibility features addressed during the formal review as well as do a full review pass of all site content in June 2021. Recognizing the challenge of completing all updates within the remaining timeframe of the agreement, Texas A&M identified the following tasks to be completed prior to the completion of the existing agreement:

- Complete full accessibility review pass of Pest Surveillance, Plant Pest ID Systems, Inspections, and SPS Course Review modules in English.
- Update universal navigation issues, internal player issues, course material issues, and UI issues addressed during review of Pest Surveillance, Plant Pest ID Systems, Inspections, and SPS Course Review modules in English.
- Complete content quality assurance testing of all Plant Health modules in English by Instructional Designer. Conduct QA testing of Pest Surveillance, Plant Pest ID Systems, and Inspections modules in English
- Update Pest Surveillance, Plant Pest ID Systems, Inspections, and SPS Course Review module SCORM packages in English on SPSCourses.com
- Conduct quality assurance testing of the SPScourses.com site and platform, and identify list of updates/revisions needed to make the platform fully accessible.
- Document all updates and changes.

In September 2022, Texas A&M team verified that all of the above tasks have been completed. A work plan to revise and update accessibility across all remaining modules, languages, and the site platform has been devised and is ready to implement pending availability of resources.

From September 2021 to September 2022, Texas A&M worked closely with the Food Safety Network team to establish a workflow to strategically deliver new and engaging content across different mediums. Within this agreement, efforts were focused on celebrating 10 Years of the Sanitary and Phytosanitary Distance Learning project and its evolution over the years, which resulted in the delivered content outlined below:

a. Blogs and Success Stories:

- (2022, June 7). Sanitary and Phytosanitary Distance Learning: A 10 Year Anniversary Celebration on World Food Safety Day. [Blog post]. <u>https://www.agrilinks.org/post/sanitary-and-phytosanitarydistance-learning-10-year-anniversary-celebration-world-food-safety</u>
- b. Knowledge Management Events: (described in further detail above Deliverable #7)
 - APEC FSCF PTIN Workshop for Food Safety Experts and Policymakers -- Whole Genome Sequencing (WGS): Laboratory Capacity Building of Environmental Testing for Foodborne Pathogens: Virtual In-Laboratory Training - Western Hemisphere (08/08/22 - 08/11/22)
 - APEC FSCF PTIN Workshop for Food Safety Experts and Policymakers -- Whole Genome Sequencing (WGS): Laboratory Capacity Building of Environmental Testing for Foodborne Pathogens: Virtual In-Laboratory Training - Eastern Hemisphere (08/15/22 - 08/18/22)
- c. Visual Services: A video was created and filmed to promote a decade of the SPS Distance Learning Program and its associated content being hosted on SPSCourses.com.
 - A Decade of the SPS Distance Learning Program (06/07/22) <u>https://www.youtube.com/watch?v=ca50b-extHw</u>



- d. Other Products: Throughout the year, Texas A&M supported the FSN team in developing templates that would streamline the use of content materials and creation of marketing materials and formal reports. The following templates and materials were created as part of this deliverable:
 - How to Create an Account in SPSCourses.com (How-to Document)
 - How to Turn-Off Pop-Up Blockers in SPSCourses.com (How-to Document)
 - How to Change Font Size in SPSCourses.com (How-to Document)
 - How to Access SPSCourses.com Offline via the Moodle App (How-to Document)



Celebrating 10 Years of SPS Distance Learning and the Evolution of the Program

As expressed in the Knowledge Management section, a focus of this agreement was to celebrate the evolution and exponential growth of the SPS Distance Learning Program over the past decade.

In 2010, through a new interagency partnership between USAID and USDA, the SPS Distance Learning Program was launched with the goal of strengthening Pakistan's ability to comply with international trade standards for plant-based products. FAS and the <u>Animal and Plant Health Inspection Service (APHIS)</u>, along with other USDA agencies and the <u>Centre for Agriculture and Bioscience International (CABI)</u>, led the SPS Distance Learning Program in partnership with Pakistan's <u>Ministry of National Food Security and Research</u>, Department of Plant Protection (DPP), and coordinated with local provincial governments. The SPS training program spanned a period of four years, beginning with an orientation workshop in March 2013 and ending with certificate ceremony in May 2017 and a summative module in October 2017. Over the span of the program, 50 Pakistani participated in the program, with a majority of participants being regulatory and scientific officials of the Department of Plant Protection of the Pakistan Ministry of Agriculture or members of provincial agriculture departments. Upon completion of the 172-hour program, 27 participants completed the full program and received certificates, in addition to acquiring the essential skills needed to collect and analyze data and to formulate effective policies to increase productivity and expand markets.

After the success of the SPS Distance Learning Program project in Pakistan, the USDA requested that Texas A&M convert all existing plant health modules from Flash to HTML5 capability. Initiated in 2017, this deliverable was completed by the end of August 2018. All 14 modules were made available on the SPSCourses.com for free to learners across the globe who created an account. In early March 2021, Texas A&M in partnership with the USDA, released two new modules, the Animal Health and Food Safety Module to SPSCourses.com. Over the years, the SPS Distance Learning Program has become home to plant health, animal health, and food safety content across 5 languages: English, Spanish, French, Dari, and Russian. The SPSCourses.com platform is also home to the future Post-Harvest Handling Modules of UVG and serves as the main hosting site for all phases of the APEC FSCF PTIN Workshop for Food Safety Experts and Policymakers. Across the past decade, the SPS Distance Learning Program has transformed from a single-country program supporting 50 learners to an international training program with over 850 active learners across 82 countries who have completed at least one learning module [See Figure 1.1].

Figure 1.1. Number of SPS Learners Who Have Completed at Least 1 Module by Country (Countries with 2 or more Learners)



Meet Our SPS Distance Learning Program Active Learners - a Snapshot

In 2018, new learners to the SPSCourses.com site were asked to fill out basic profile information when setting up a new account. In 2020, optional demographic questions were added to the registration form in an attempt to learn more about individuals utilizing the program site. With this data we have been able to piece together a visual representation of the SPS Distance Learning Program Active Learner population [See Figure 1.2]. An active learner is defined as a learner who has completed one or more learning modules within the SPS Distance Learning Program.

Figure 1.2. Combination of multiple data visualization graphics to summarize SPS Distance Learning Program Active Learner demographics including: language preference, gender, age, and sector.



SPS Distance Learning Program by the Numbers: All Registrants

In this section we will take a look at the SPS Distance Learning Program by all of the numbers. This includes looking at all SPSCourses.com registrants and exploring their engagement with module content and the program site as a whole.

Since the launch of SPSCourses.com, 3,606 users have created accounts. Among the 3,606 current learners, more than three-quarters (76%; n=2,728), access the learning resources in English. Since the release of the Plant Health modules in English, 603 learners have completed a total of 1953 modules. The Pest Surveillance module has the highest number of completions with 285 users [See Figure 1.3]. The second most popular module is Plant Pest Identification Systems with 239 completions. In 2019, the CET created individual module certificates of completion that could be earned by learners who review all content with an individual module and achieve a passing score on the module post-assessment. This addition has been extremely popular amongst participants interested in having documentation of their coursework. Since their release, 1,155 certificates have been generated across 13 modules (note: SPS Course Review does not have a certificate). The online plant modules have demonstrated learning gains in learner knowledge of module content. For example, of the 366 learners who completed the Inspections module, learners' average score on the pre-test was 46.84 (SD = 12.37), and an average of 83.02 (SD = 13.58) on the post-test. The difference between pre-test and post-test demonstrates a statistically significant and very large learning gain after completing the inspections module (t (365) = 45.22, p < .001, Cohen's d = 15.31). Table 1 displays that all of the modules demonstrated a statistically significant and very large learning gain after completing the plant health module.

Module Name	Pre-Test Mean (SD)	Post-Test Mean (SD)	t	P value	Cohen's d
Inspections (n=366)	46.84 (12.37)	83.02 (13.58)	-45.22	<.001	15.31
IPPC and the Standard Setting Process (n=121)	28.6 (10.43)	77.19 (17.14)	-31.01	<.001	17.24
Market Access (n=75)	4 (13.38)	46 (19.92)	-16.81	<.001	21.64
Pest Free Concepts (n=104)	73.55 (14.29)	90.5 (13.99)	-15.33	<.001	11.28
Pest Risk Analysis (n=228)	42.16 (10.67)	90.9 (10.13)	-58.92	<.001	12.49
Pest Risk Assessment (n=252)	52.31 (12.83)	79.76 (18.07)	-26.59	<.001	16.38
Pest Risk Communications (n=15)	28 (12.65)	84 (13.52)	-16.04	<.001	13.52
Pest Risk Management (n=209)	70.72 (17.65)	81.63 (18.06)	-10.75	<.001	14.66
Phytosanitary Certification (n=18)	53.09 (15.03)	59.26 (11.43)	-2.40	0.028	10.93
Phytosanitary Treatments (n=153)	46.08 (21.34)	60.78 (33.23)	-9.99	<.001	18.20
Pest Identification (n=251)	68.08 (14.53)	91.28 (12.67)	-28.16	<.001	13.06
SPS Agreement (n=239)	45.65 (6.17)	85.15 (13.02)	-47.02	<.001	12.99
Surveillance (n=490)	55.82 (14.19)	67.71 (12.95)	-22.92	<.001	11.49

Table I. Learner Gains Across Plant Health Modules

Among the 3,606 current learners, 621 learners have accessed these learning resources in Spanish. Since the release of the Plant Health modules in Spanish, 257 learners have completed a total of 1,323 modules. The Pest Surveillance module has the highest number of completions with 200 users [See Figure 1.3]. The second most popular module is Inspections with 170 completions. Since certificates of completion were added to the course, 917 certificates have been generated across 13 modules (note: SPS Course Review does not have a certificate).

In 2018, Texas A&M worked with a third-party translation vendor to translate each of the modules into French as part of an agreement with USDA-FAS. Initiated in 2017, these modules were completed and added to SPSCourses.com by December 2018. Among the 3,606 current learners, 246 learners have accessed these learning resources in French. Since the release of the Plant Health modules in French, 63 learners have completed a total of 231 modules. The Pest Surveillance module has the highest number of completions with 48 users [See Figure 1.3]. The second most popular module is Plant Pest Identification Systems with 41 completions. Since certificates of completion were added to the course, 154 certificates have been generated across 13 modules (note: SPS Course Review does not have a certificate) [See Figure 1.4].

Learners who completed 75% of the modules performed significantly higher than those who completed less than 25% of the modules on specific modules: Pest Surveillance (3.92 points higher), Inspections (5.02 points higher), Pest Risk Assessments (14.32 points higher) and Pest Free Concepts (13.02 points higher). Learners who completed 75% of the modules performed significantly higher than those who completed between 26% and 49% of the modules on the Pest Risk Assessment module (11.32 points higher). Learners who completed 75% of the modules performed significantly higher than those who completed 75% of the modules performed significantly higher than those who completed 75% of the modules performed significantly higher than those who completed 50% and 74% of the modules on the Plant Pest ID Systems (5.03 points higher) and Pest Risk Assessment module (11.32 points higher).

Module Name	Sum of Squares	df	Mean Square	F	Sig.	η²
The SPS Agreement	664.19	3	221.40	1.64	0.18	-
Plant Pest ID Systems (Real)	1024.72	3	341.57	2.61	0.05	0.02
Inspections (Real)	1291.89	3	430.63	3.67	0.01	0.03
Pest Surveillance (Real)	944.36	3	314.79	2.59	0.05	0.02
Pest Risk Assessment	6259.54	3	2086.5 I	8.94	<.001	0.10
Pest Risk Management	1436.91	3	478.97	1.75	0.16	-
Pest Risk Analysis	154.53	3	51.51	0.59	0.62	-
Phytosanitary Certification	1115.37	3	371.79	2.08	0.11	-
Pest Risk Communication	713.31	3	237.77	2.17	0.09	-
Pest Free Concepts	1997.27	3	665.76	5.44	0.00	0.13
Market Access Process	65.22	3	21.74	0.09	0.97	-
Phytosanitary Treatments	304.79	3	101.60	1.02	0.39	-
The IPPC and the Standard Setting Process	246.34	3	82.11	0.38	0.77	-

Table 2. Analysis of Variance (ANOVA)

Note. Eta-squared is estimated based on the fixed-effect model. *. The mean difference is significant at the 0.05 level.

Table 3. Post Hoc Tests with Bonferroni Correction	
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	Dependent Variable		Mean	Std. Error		95% Confidence Interval		
Module Name	% of Modules	% of Modules completed			Sig.	Lower Bound	Upper Bound	
Plant Pest ID Systems	75% or More	50% to 74%	5.032*	I.827	0.037	0.18	9.88	
Inspections	75% or More	25% or Less	5.017*	1.525	0.007	0.97	9.07	
Pest Surveillance	75% or More	25% or Less	3.920*	I.454	0.044	0.06	7.78	
Pest Risk Assessment	25% or Less	75% or More	-14.319*	2.970	0.000	-22.22	-6.42	
	50% to 74%	-14.322*	3.094	0.000	-22.55	-6.09		
		26% to 49%	-11.322*	3.235	0.003	-19.93	-2.72	
Pest Free Concepts	75% or More	25% or Less	13.022*	3.539	0.002	3.52	22.53	

*The mean difference is significant at the 0.05 level.

In early March 2021, Texas A&M in partnership with USDA, FDA, and FSIS released the Food Safety Module to SPSCourses. com. Since the Animal Health Module's release in English, Spanish, and now Russian, the module has been completed by 42 learners. The online Animal Health module has demonstrated learning gains in learner knowledge. Of the 42 learners, learners' average score on the pre-test was 50.57 (SD = 11.46), and an average of 81.82 (SD = 9.59) on the post-test. The difference between pre-test and post-test demonstrates a statistically significant and very large learning gain after completing the Animal Health module (t (32) = 12.69, p < .001, Cohen's d = 14.07).

In mid-March 2021, Texas A&M in partnership with USDA, FDA, and FSIS released the Food Safety Module to SPSCourses. com. Since the Food Safety Module's release in English and now Spanish, the module has been completed by 151 learners. The online Food Safety module has demonstrated learning gains in learner knowledge. Of the 151 learners, learners' average score on the pre-test was 50.57 (SD = 11.46), and an average of 81.82 (SD = 9.59) on the post-test. The difference between pre-test and post-test demonstrates a statistically significant and very large learning gain after completing the Food Safety module (t (32) = 12.69, p < .001, Cohen's d = 14.07).







Figure 1.4. Stacked bar chart reflecting the number of learners who received SPSCourses Module Certificates across the English, Spanish, and French translations.

Increasing Visibility of the SPS Distance Learning Program

Since 2018, learners have been visiting SPSCourses.com to register for a free account and unlock their access to over 180 hours of content on plant health, animal health, and food safety topics. Over the past few years, the USDA and Texas A&M have collaborated together to increase the visibility of the SPS Distance Learning program through marketing efforts, webinars, and knowledge management events. Throughout this process, the team has been gathering and analyzing the date to determine what factors influence new user account creations and/or the completion of modules. By reviewing this data, our team was able to determine how specific events influenced learner engagement with both the SPSCourses.com site and content [See Figure 1.5]. This analysis also helped identify why less user engagement might be taking place during certain quarters. After thorough analysis, Texas A&M believes that knowledge management practices such as the hosting of webinars and knowledge management events (including the delivery of workshops), were the most effective in driving new and existing learner traffic to the SPSCourses.com platform. Additionally, marketing campaigns through the release of blogs, promotional videos, and social media posts also played a key role in the influx of learners to the site. Overall, marketing efforts and strategic use of knowledge management events were successful, and it is recommended that these types of campaigns continue to be used to increase visibility and use of the SPS Distance Learning Program.

Figure 1.5. SPS User Account Creation vs. Module Completion - All Time

Annotated line graph reflecting user account creation and module completion throughout the life of SPSCourses. com. The graph is annotated with knowledge management events, marketing activities, and standard site maintenance downtime to assist in addressing trends with learner engagement on the SPSCourses.com platform.



Has Revolutionized Food Safety: From Environmental Sampling to Foodborne Disease Prevention, Response, and Mitigation

A Look to the Future

Today, SPSCourses.com serves as the central hub for all learning modules and content developed as part of the SPS Distance Learning Program. This powerful suite of on-demand courses and resources seeks to strengthen the knowledge of regulators in foreign countries on SPS interventions and address food safety, animal health and plant health issues in agricultural value chains.

With each quarter, the number of users on SPSCourses.com continues to grow as more countries and groups across the globe seek out this content and seek to boost their knowledge on these topics in our efforts to combat poverty, malnutrition and hunger. With the increased visibility of the program has come new requests for the original materials to be translated into new languages. Since their origin, content has been translated across five different languages, with the hope that more translations will be available in the future. Ensuring a secure food supply is a top priority of countries around the globe and educating learners in SPS topics is one more step forward to achieving that goal.









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