2021 Progress Report to the Southern Region Small Fruits Consortium

Project Title: Online Training Series in Postharvest Handling and Food Safety of Small Fruits

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Public abstract
Online trainings have become the new norm in the years of the COVID pandemic covering many horticultural aspects including postharvest management and handling. However, it is common for such trainings to be longer in duration and to be often too long for many interested individuals to attend. Furthermore, the available trainings are commonly captured from live slide presentations which makes them of lower audiovisual quality. In this project we are creating short training videos of high quality on important postharvest topics. The set of videos will be available for free to anyone interested in both English and Spanish. Thus far our team has captured a significant proportion of the footage required for the production of the videos and we have finalized the production of the Strawberry video in English which will be posted online soon. We are aiming to finish capturing the missing footage during the berry production season this coming Spring and finalize the production and rendering of the videos in Summer.

Objectives
1. Create a series of online trainings in the format of a collection of short videos related to small fruits (strawberries, blueberries, blackberries and raspberries) postharvest handling and postharvest food safety. The series will include a total of 3 hours of recorded material in two languages: English and Spanish.
2. Use the materials in an online format or in person during county agent trainings.
3. Utilize University of Georgia (UGA) and Cooperative Extension websites, the SRSFC website, the Georgia Fruit and Vegetable Growers Association, and other agencies and communication networks to enhance the dissemination of the online course as well as through social media platforms for advertisement and distribution of the material.
4. Evaluate the benefits of the online course by using online training metrics such as viewership, viewers' engagement and demographics of viewers. An online survey will also be created to capture the effectiveness of this activity.

Justification and Description
1.1 Scope
Despite the fact that there is a number of online training courses on postharvest handling, these sessions often require attendees to spend several hours online in front of their monitors in order to get the information that they need. It is common for the training topics to be bundled together in longer sessions (45 mins to 1 hour), often focusing on products irrelevant to producers from the Southeast region. Additionally, the enrollment fees for such courses are quite high, making them inaccessible to farmers, agricultural workers and urban growers who need to solve specific problems that their operations are facing. For example, growers in our region have training needs such as farms that need to train a new harvest crew in berry quality and maturity right before the harvest season, or smallholder farmers who wants to learn how to appropriately store their products. Due to the COVID-19 pandemic, online education has become a necessity, and the drastic changes to our lives have changed the learning style for many professionals. This has led to an online training fatigue attributed to the length of online interactions which deters people from attending long online sessions. We are proposing a targeted, concise yet

scientific approach to online education where large subjects are divided into short, manageable tutorial videos with a typical duration of 3 to 10 minutes each.

The educational material produced utilizes novel learning techniques with real-life examples that are compatible with online media, addressing the limited presence of extension agents and horticulture specialists caused by COVID-19 social distancing measures. We anticipate that the popularity of this training will be increased due to greater familiarization of the population with e-learning recently due to COVID-19. Our program will also tackle the shortage of online courses in postharvest handling and food safety in Spanish to cater to the large majority of agricultural workers who communicate solely in Spanish. Hence, it will increase the availability of reliable multilingual agricultural educational material and will allow farmers, agricultural workers and urban growers to use the online trainings in an à la carte fashion according to their most pressing needs.

The project concentrates on the production of a series of short online video tutorials focusing on postharvest handling and food safety of small fruits for producers, pickers, packers and shippers in the Southeastern United States. The online courses aim to reduce postharvest losses, prevent quality deterioration, recalls, and subsequent loss of value during the production and trade of small fruits in the Southeast region. Our team has been preparing the presentations, record, process and render the course materials in online video sharing platforms (such as YouTube) taking into account the harvest season of each small fruit crop. The online publication of the material will be promoted appropriately in scientific and industry meetings (SRFVC) as well as at field days and by using online advertisement tools (local media, listservs and UGA channels). The online courses will be available to all interested individuals for free in both English and Spanish. Our team work closely with UGA Cooperative Extension and is planning to make the videos available with Continued Education Credits for extension agents who complete the training through the UGA platform. The impact assessment of the online course will be reported and communicated to SRFSC and interested cooperative extension agents and specialists electronically within the first year after the completion of the project and in person in the form of a conference presentation. Participant comments and reviews will be used to improve the tutorials for subsequent online training courses.

1.2. Project Methods and Analytics

The project will cover postharvest handling and postharvest food safety of strawberries, blueberries, blackberries and raspberries. There will be a complete chapter dedicated to postharvest food safety issues for freshly harvested small fruits. The project staff has been recording and producing the tutorial videos during the harvest season using real life examples and showing proper practices in action.

This project uses the appropriate U.S grades and standards for small fruit crops (U.S. Department of Agriculture, 1995, 2006, 2016a, 2016b) as well as U.S. Department of Agriculture guides for storage (U.S. Department of Agriculture, 2002, 2004), and state of the art research carried out at the UGA and elsewhere (Gross, Wang, & Saltveit, 2016).

Online video series topics - *Status*	
I. Postharvest Food Safety ***Recorded the majority of material needed***	**II. Strawberry** ***Completed - Link***
1. Human Pathogens in Small Fruits	1. Maturity Indices and Quality
2. Cross Contamination	2. Harvest and Postharvest handling
3. Water Quality	3. Packaging and Storage
4. Sanitation Programs	4. Physiological Defects and Spoilage
5. Traceability	
6. Risk Assessment	

III. Raspberry and Blackberry *Recorded part of the material needed*	**IV. Blueberries** *Recorded part of the material needed*
1. Maturity Indices and Quality	1. Maturity Indices and Quality
2. Harvest and Postharvest handling	2. Harvest and Postharvest handling
3. Packaging and Storage	3. Packaging and Storage
4. Physiological Defects and Spoilage	4. Physiological Defects and Spoilage

Results

Our team has produced one video that covers the Strawberry section of the project (link: https://drive.google.com/file/d/1fTCpNpdGJl_kJqMItcptMNMBN_BdoSyQ/view) while the majority of the Postharvest Food Safety section has been recorded. The material for the Raspberry and Blackberry as well as the Blueberry section have also been partially collected. With permission from the sponsor, we plan to complete this project by mid 2022 and provide a final report when appropriate.

References

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