Module A: Produce Safety, the Human Pathogen SARS-CoV-2 and COVID-19

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PRODUCE SAFETY DURING COVID-19
Learning Outcomes

- Differentiate between SARS-CoV-2 and COVID-19
- Describe common ways SARS-CoV-2 can be spread during production, harvest, postharvest, transport and at the market
- Identify strategies to prevent and reduce risks of SARS-CoV-2 contamination along the supply chain.
- Recognize the value of implementing additional SARS-CoV-2 food safety practices in your operation
**Notes:**

- This training NOT a way to meet § 112.22(c) which requires that at least one supervisor or responsible party from a farm subject to the FSMA Produce Safety Rule must have successfully completed food safety training at least equivalent to that received under standardized curriculum recognized as adequate by the Food and Drug Administration.
- They also need to stay in contact with local and state health departments to make sure they are following the local and state regulations which vary.
- Consider taking the Produce Safety Alliance (PSA) training, to lessen a grower’s risk and to make sure they are complying with the law.

**Resources:**

• Produce Safety Alliance – PSA - https://producesafetyalliance.cornell.edu/
Notes:

- Just like with PSA training, producers and their staff are the key to growing and distributing safety on and off the farm, thus making the decision to do something on the farm is up to them.

- Producers know their operation the best—what they produce, how they produce, who works on the farm, who comes on the farm, how the produce is moved off the farm, and all of the other details that go into running a successful operation.

- Thus, it is the person or people who make production, marketing and purchasing decisions for the operation and know the day-to-day activities that MUST be involved in assessing food safety risks and developing the farm’s food safety plan which must include dealing with COVID-19 and any future pandemics.

- Actions to reduce food safety risks not only impact the financial viability of farms, but also the health and safety of those who work on the farm, as well as those who come on the farm in associated industries and those that consume the produce grown.

Resources:

- COVID-19 Update: USDA, FDA, Underscore Current Epidemiologic and Scientific Information Indicating No Transmission of COVID-19 Through Food

- COVID-19 Response Plan Template for Fruit and Vegetable Farms [https://docs.google.com/document/d/12sLifH6Dm48lm_s2OIM3rIrN54Fv_z_i52Mvy5yGA/edit](https://docs.google.com/document/d/12sLifH6Dm48lm_s2OIM3rIrN54Fv_z_i52Mvy5yGA/edit)

What is SARS-CoV-2 and COVID-19?

- SARS-CoV-2 is the virus that causes the disease COVID-19
- SARS = Severe Acute Respiratory Syndrome
  - Family of viral respiratory diseases caused by a SARS-associated coronavirus
- COVID-19 = CO for corona, V1 for virus and D for disease with 19 for the year this was identified
  - Symptoms include a fever, cough, shortness of breath or difficulty breathing, chills, muscle pain, sore throat, or new loss of taste and smell.

Notes:

- SARS is caused by a virus that takes over your body’s cells and uses them to make copies of itself. The SARS virus is from a group known as coronaviruses, which also cause the common cold.
- This family of viruses includes MERS-CoV and SARS-CoV, which are two earlier coronaviruses affecting humans
- SARS can spread when people who have it cough or sneeze, spraying tiny droplets of liquid with the virus to other people within 2-3 feet. Other people may get the virus by touching something those droplets hit, then touching their nose, eyes, or mouth.
  - Some staff may be at a higher risk including older adults and people with certain underlying medical conditions.

Resources:

- Coronavirus and COVID-19: What You Should Know
  https://www.webmd.com/lung/coronavirus#:~:text=COVID%2D19%20is%20a,to%2Dperson%20contact.
- Episode 2: SARS-CoV-2? COVID-19? What’s the Difference – CDC -
  https://youtu.be/VAX0he6vjU0
- Mythbusters – CDC -
- What’s the Difference between a Cold, the Flu and COVID-19
  https://www.cedars-sinai.org/blog/cold-flu-covid-
The novel coronavirus, or COVID-19.
Notes:

- ICMSF opinion on SARS-CoV-2 and its relationship to food safety (3 Sept 2020)
  - “SARS-CoV-2 should NOT be considered a food safety hazard since a true food safety hazard enters the human body with food via the gastro-intestinal (GI) tract, where it can infect organs/tissues elsewhere in the human body.” Page 3
  - “... to date there has not been any evidence that food, food packaging or food handling is a source or important transmission route for SARS-CoV-2 resulting in COVID-19.” Page 3
  - “... it is prudent to emphasize to food producers, manufacturers and handlers the importance of using good food hygiene practices to minimize any possibility of food or food contact surfaces as a vector for SARS-CoV-2.” Page 4

  - “no credible evidence of food or food packaging associated with or as a likely source of viral transmission of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the virus causing COVID-19.”

- There are some rare instances of transfer of the virus from people to animals after close contact with a person with COVID-19.
cats, dogs, ferrets, fruit bats, hamsters, tree shrews and some other mammals can be infected but we don’t know all the animals that can be at this time.

Most of these are pets that have become sick after contact with people with COVID-19

Laboratory mice, pigs, chickens, and ducks do not seem to become infected or spread the infection based on results from studies.

Several animals in zoos have tested positive including lions, tigers, puma, snow leopard, cougar and great apes.

Reports of minks on mink farms that have reported COVID-19 but there may be a possibility (Netherlands and Denmark). There is guidance available from the USDA, CDC and state animal and public health partners on protecting work and animal health.

Resources:

- USDA, FDA Underscore Current Epidemiologic and Scientific Information Indicating No Transmission of COVID-19 Through Food or Food Packaging –

Notes:

- Virus is carried through moisture droplets and released into the air through coughing, talking, singing, yelling, sneezing,
- The viral particles in the droplets in the air can attach to cells in a healthy person and then infect, replicate and be dispersed once again to infect other healthy people
- Particles usually only travel a few feet which is why 6 ft of social distancing is recommended. BUT particles may travel further by aerosols and air conditioning/vents by helping them move further from infected people
- Masks and face coverings are therefore recommended as they trap some of or most of these viral particles and reduce the spread of the SARS-CoV-2 (the virus)
- In the beginning of the pandemic, recommendations did not include using masks because it was unclear the major route(s) of transmission.

Resources:

• COVID-19 Information for Food Industry Workers – Cornell Cooperative Extension - https://www.youtube.com/watch?v=9NXhZ3V-VMQ
• Episode 4: What’s a Respiratory Droplet? Why Does It Matter? https://www.youtube.com/watch?v=qWiA3NUD1Mw
Notes:

- not all of what is on a surface will be transferred to their hand which is why it is less likely than person to person
- IF CONCERNED ->
  - Avoid touching surfaces or items unnecessarily
  - Avoid touching your mouth, nose or face
  - Follow with handwashing and/or using hand sanitizer

Resources:

- COVID-19 Preventative Measures Cleaning and Disinfection
- COVID-19 Response Plan Template for Fruit and Vegetable Farms
  https://docs.google.com/document/d/12sLifH-6Dm48lm_s2OIM3rlrN54Fv_z_i52Mvy5yGA/edit
COVID-19 FAQ for Foodservice Cleaning and Disinfection
Notes:

- There are some rare instances of transfer of the virus from people to animals after close contact with a person with COVID-19.
  - cats, dogs, ferrets, fruit bats, hamsters, tree shrews and some other mammals can be infected but we don’t know all the animals that can be at this time.
  - Most of these are pets that have become sick after contact with people with COVID-19.
  - Laboratory mice, pigs, chickens, and ducks do not seem to become infected or spread the infection based on results from studies.
  - Several animals in zoos have tested positive including lions, tigers, puma, snow leopard, cougar and great apes.
  - Reports of minks on mink farms that have reported COVID-19 but there may be a possibility (Netherlands and Denmark). There is guidance available from the USDA, CDC and state animal and public health partners on protecting work and animal health.
  - No reports of SARS-CoV-2 in wildlife.

Resources:

- Experimental Infection of Cattle with SARS-CoV-2 - https://wwwnc.cdc.gov/eid/article/26/12/20-3799_article
Food and Food Packaging Transmission of SARS-CoV-2

- NO cases reported of COVID-19 contracted from food or food packaging
- Transmission at food operations has been due to person-to-person transmission

Notes:

- NO documented cases of COVID-19 contracted from food or food packaging according to the USDA, FDA and CDC (Feb 18 press release)
- NO COVID-19 cases have linked to food consumption or handling
- Transmission at places where food is served or sold has been DUE to person-to-person transmission especially without face coverings

Resources:

Notes:
• In food safety training, we discuss how people carry human pathogens such as Shigella, Hepatitis A, Norovirus, Cyclospora and others.
• People can also spread zoonotic pathogens like Salmonella, pathogenic E. coli and listeria monocytogenes.
• However, all of these human pathogens are spread via the fecal-oral route
• Thus trainings involve dealing with staff who are often the last to touch produce before it reaches the consumer, so the training focuses on those risk.
• For SARS-CoV-2 and COVID-19 we need other strategies because the spread is thru a different route

Resources:
Notes:

- Educate yourself on the risks SARS-CoV-2 and COVID-19 pose for your farm. Use the national, state and local health departments as well as your ag service providers for assistance. Coming to this training sets you up to assess your risks.
- Implement practices to reduce the risks from SARS-CoV-2 and COVID-19 identified in your operation.
- To make sure practices you want to implement take place, you will need to monitor them.
- If a problem with implementation is identified then you will need to fix the problem by corrective actions and monitoring to prevent it from occurring again.
- Lastly, you may incorporate recordkeeping for some of the tasks to be able to monitor implementation of practices and see if these practices are addressing the problems and reducing the risks.

Resources

- Produce Safety Alliance Trainer Resources – Cornell - [https://producesafetyalliance.cornell.edu/training/trainer-resources/]
Notes:

- Focus on preventing person to person exposure and contamination from COVID-19
- Identify your highest risk areas and develop practices that will reduce these risks. Some possible considerations:
  - Create a single entry point on the farm for everyone working, visiting or coming on the farm to record their contact info, answer questions and take the temperature
  - Policies on what to do if someone appears to be “sick” and what to do
  - Decide on farmer’s markets based on their adherence to the appropriate guidance by the local/state health department
  - Eliminate farm pickups to reduce the number of people coming on the farm
  - Create a farm stand that is away from the majority of the farm and staff (and your family)
- Many of these changes may require modification of current practices and ALSO additional training for staff, visitors, vendors, etc.
- In the past year, you may have already implemented these practices.
- Ask for help and seek training if you are unsure from the local and state health departments and agriculture service providers
Resources:

- Agriculture Workers and Employers – CDC -
- Food Safety and the Coronavirus Disease 2019 (COVID-19) – FDA -
Notes:

- Because this is primarily spread person to person this impacts your farm.
- Because SARS-CoV-2 is NOT transmitted thru the fecal-oral route you will need to take additional and different steps than what is standardly used in food safety training to reduce the chance of SARS-CoV-2 and COVID-19 becoming a problem.
- Farming is not done alone. You interact with staff, customers, delivery staff, repair people, etc. Thus it is imperative that you take this pandemic seriously if not for yourself, then for the other people you interact with for your farm business.
- Surface transmission is possible but has not been reported to be the major way this virus is spread. BUT that doesn’t mean you should lessen how you clean and sanitize for basic food safety because microorganisms have not gone away during the pandemic.
- There are rare reports of transmission from people to animals.
- NO report worldwide of a person getting COVID-19 from food or food packaging.
- Produce safety success depends on your commitment to implementing risk reduction strategies for the pandemic as well as food safety.
reduction strategies

Resources:

- State & Territorial Health Department Websites – CDC - https://www.cdc.gov/publichealthgateway/healthdirectories/healthdepartments.html
- FoodCoVNET – NCSU - https://foodcovnet.ces.ncsu.edu/welcome-to-foodcovnet/
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