



Cornell
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College of Agriculture
and Life Sciences

Testing During Pandemic

A guided tour through questions and decisions for the Food Industry

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Year	Agent	Deaths US	Infected Globally	Deaths Globally
1832-1866	Cholera	5-10% of population in large cities	Still present	
1858	Scarlet fever	2 K		
1906-1907	Typhoid Mary	3 (53 infected)		
1918	Spanish Flu (H1N1)	700 K	500 M 1/3 world population	50 M
1957-1958	Asian Flu (H2N2)	120 K		1.1 M
1968	H3N2 (Influenza A)	100 K		1 M
1981-Present	HIV	>700 K	Still present	35 M
2003	SARS	0 (27 cases)	8 K	1 K
2009	Swine Flu	12 K	1.4 B	0.5 M
2014-2016	Ebola	2 (11 cases)	28 K	11 K
2015-Present	Zika	100 K infected		
2019-Present	COVID-19	>200 K	>30 M	> 1 M



The screenshot shows a web browser window displaying the Cornell CALS website. The browser's address bar shows the URL: instituteforfoodsafety.cornell.edu/coronavirus-covid-19/food-industry-resources/. The browser's tab is titled "Food Industry Resources | Institu...". The website header features the Cornell CALS logo (College of Agriculture and Life Sciences) and a search bar with the text "SEARCH:" and a "go" button. Below the header, the main title is "Institute for Food Safety at Cornell University". A navigation menu includes "The Coronavirus (COVID-19)", "Trainings", "Services", "Programs", "Resources", "News & Events", and "Contact Us". The "The Coronavirus (COVID-19)" menu item is highlighted. On the left side, there is a sidebar menu with the following items: "The Coronavirus (COVID-19)", "Food Industry Resources" (highlighted), "Food Industry FAQs", "Food Facility COVID-19 Strategy Checklist", "NYS Laws & Regulations", "Consumer Resources & FAQs", "Info for Facilities Producing Hand Sanitizer", "Infographics & Posters", and "Peer-Reviewed Papers". The main content area features a large image of a coronavirus particle with the text "Food Industry Resources" overlaid. Below the image, the text reads: "Home / [The Coronavirus \(COVID-19\)](#) / Food Industry Resources". The main text states: "COVID-19 is already changing the way we interact with and produce food. As we each look to control the spread and impact of COVID-19, there are many questions around the risks associated with food production and to our employees to ensure that a safe and robust food supply is maintained for the public. Below you can find useful links to expert resources to help address your specific questions. We will continue to provide updates to these resources as the situation changes and new information becomes available." Below this text, there are two call-to-action paragraphs: "Visit our [Food Industry FAQs](#) page for more information for the food industry." and "Visit our [Food Facility COVID-19 Strategy Checklist](#) page for a checklist for food processing companies."



Key Questions and Decisions for the Food Industry:

1. Should we test for the agent that is causing the pandemic?

1a. Raw ingredients?

1b. Finished Product?

1c. Environment?

1d. Employees?

2. Should we modify the testing we are already doing?

2a. Raw ingredients?

2b. Finished Product?

2c. Environmental monitoring?



Should we test Raw Ingredients for the agent that is causing the pandemic?

Should we test Finished Product for the agent that is causing the pandemic?



Should we test Raw Ingredients and Finished Product for the agent that is causing the pandemic?



The spike is thought to have started at **Xinfadi**, one of the biggest wholesale food markets in Asia.

Following the new cases of COVID-19 some reports made a link to imported **salmon** and findings on a **cutting board**, supposedly used to prepare the fish in a wholesale market.

Out of **40 positive samples from tests of employees and the environment** at the market, **one** was taken from a **cutting board used for fileting salmon**.

U.S. FDA 'aware' of China testing food for coronavirus

By Joe Whitworth on June 18, 2020

The U.S. Food and Drug Administration has said it is aware of reports that China will begin testing foods for Coronavirus.



Should we test Raw Ingredients and Finished Product for the agent that is causing the pandemic?

IAFP: COVID-19 & FOOD SAFETY GLOBAL SUMMIT, July 29th, 2020

Current consensus of experts?

- **Possible Source 1:** Person-to-person transmission, not local (Beijing) origin, based on the DNA sequencing of SARS-CoV-2 strains isolated from Xinfadi cases.
- **Possible Source 2:** Food-to-person transmission, multiple SARS-CoV-2 positive samples found in Xinfadi, including salmon chopping board, raw food samples (sea food and meats) and environment samples.
- **Investigations still on-going, no direct evidence of either possible source.**

https://www.foodprotection.org/members/files/7_29_20_Webinar.pdf; Aug. 5th, 2020



Should we test Raw Ingredients and Finished Product for the agent that is causing the pandemic?

- For SARS-Cov2? No.
- Maybe one day we will have to ...
(History: Cholera, Typhoid Fever, Scarlet Fever, ...)





COMMODITIES AUGUST 14, 2020 / 6:48 AM / 2 DAYS AGO

Philippines bans chicken imports from Brazil on coronavirus scare

<https://www.reuters.com/article/us-philippines-birdflu-australia/philippines-bans-poultry-products-from-australia-over-bird-flu-outbreak-idUSKCN25FoFH>



Should we test Raw Ingredients and Finished Product for SARS-CoV-2?

No.



Should we test Raw Ingredients and Finished Product for SARS-CoV-2?

No.

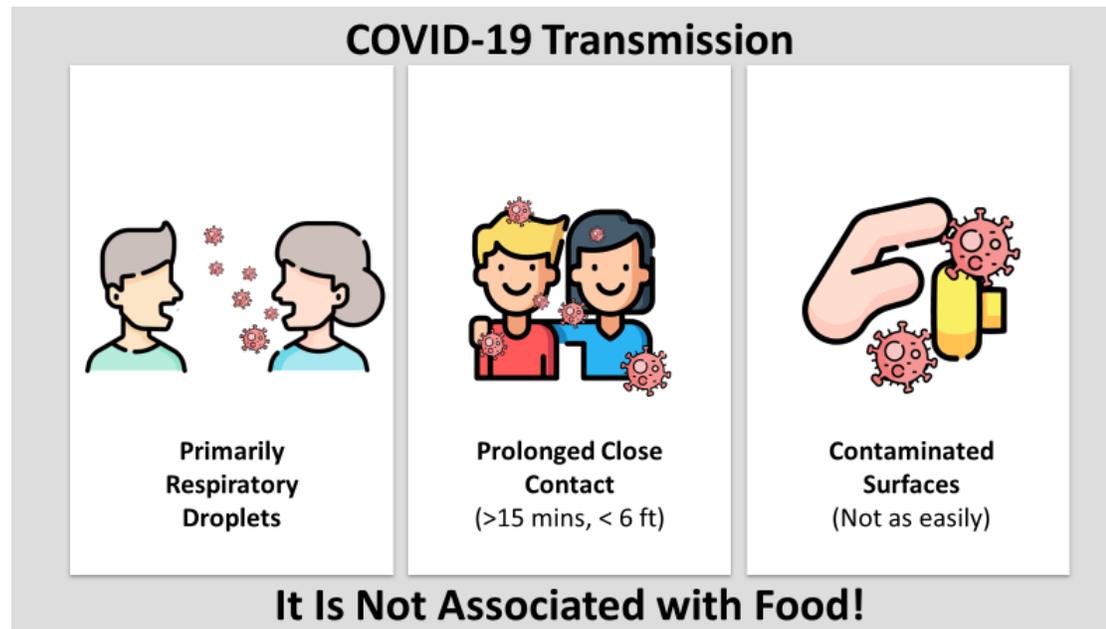
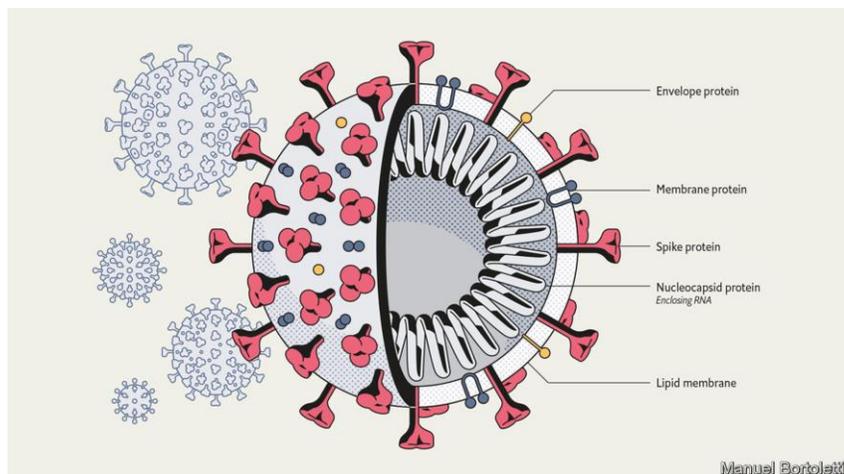
Why not?

**Because SARS-CoV-2
is NOT a Foodborne virus.**



SARS-CoV-2:

- Enveloped virus
- Short half-life outside of the host
- Contaminated surfaces not identified as the major mode of transmission
- No food related cases identified so far and we are going towards 20M confirmed cases globally.



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Should we start an Environmental Monitoring Program that targets the agent that is causing the pandemic?



Should we start an Environmental Monitoring Program that targets the agent that is causing the pandemic?

- Maybe one day we will have to ...
(History: Cholera, Typhoid Fever, Scarlet Fever, ...)
- COVID-19? No.



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Viral RNA vs. Viable virus



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- COVID-19? No.

Viral RNA vs. Viable virus

What would you use RNA Test for?

What information can viral RNA give you?



The 12 circles of protecting food employee and the food production



What Employer can do:

Engage with the community to prevent transmission of COVID-19 within the community

Educate your employees about the importance of the following preventative measures:

- social distancing
- Handwashing
- not touching your face

- face covering

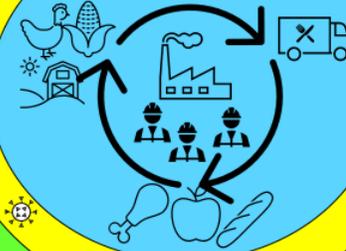
Screen workers for symptoms and exclude workers with symptoms from your facility

Provide multi-lingual training on COVID-19 control in your facility and in community

Implement continues and robust program of verifying the following preventative measures are being followed:

- social distancing
- Handwashing
- not touching your
- face covering

Verify and validate the cleaning and sanitizing procedures



Clean and sanitize frequently touched surfaces regularly

Wear Face Covering

Avoid touching your face

Wash hands or use hand sanitizer regularly

Practice social distancing

Prevent getting infected in the facility

Self-evaluate and identify when you develop any symptoms; stay home if you do

Wear Face Covering when interacting with the community

Avoid touching your face when interacting with the community and community environment

Wash hands or use hand sanitizer when interacting with the community and community environment

Practice social distancing when interacting with the community

Prevent getting infected in the community

What Employee can do:

The 12 circles of protecting food employee and the food production



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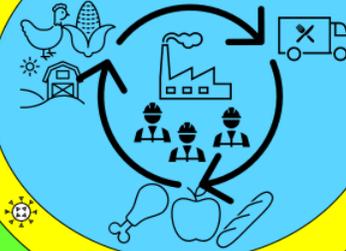
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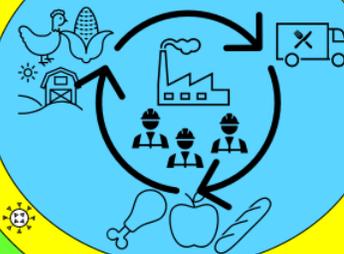
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Prevent getting infected in the community

What Employee can do:

Prevent employees from getting infected in the community

Prevent employees that DO get infected in the community from entering the facility

The 12 circles of protecting food employee and the food production



Prevent infected employees that DO enter the facility from DIRECTLY infecting other employees

Prevent employees from getting infected in the community

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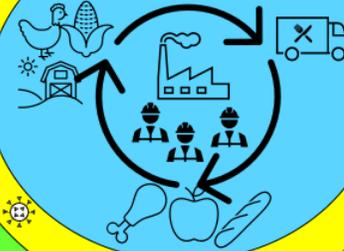
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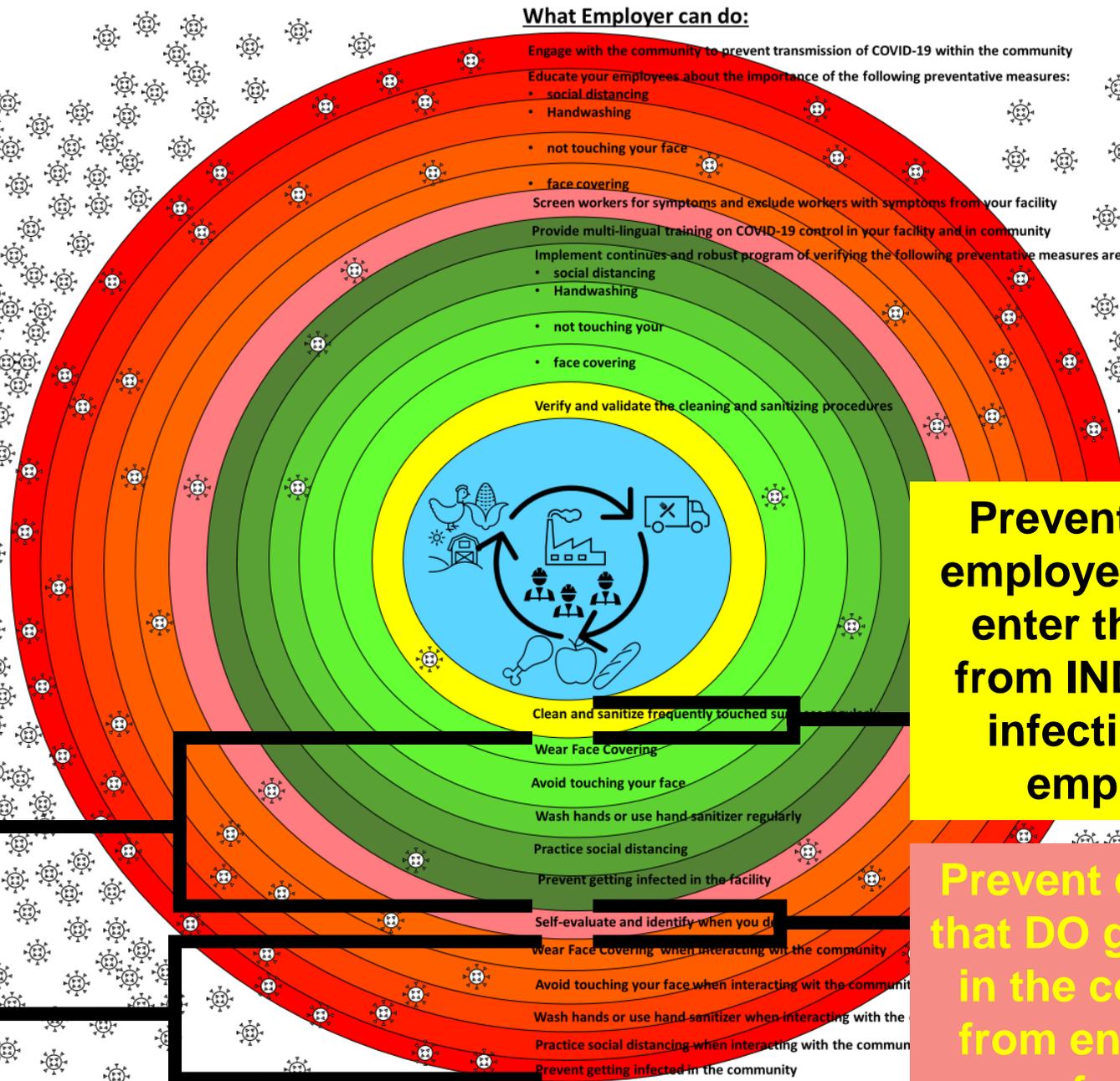
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The 12 circles of protecting food employee and the food production



Prevent infected employees that DO enter the facility from DIRECTLY infecting other employees

Prevent employees from getting infected in the community

Prevent infected employees that DO enter the facility from INDIRECTLY infecting other employees

Prevent employees that DO get infected in the community from entering the facility

Should we start an Environmental Monitoring Program that targets the agent that is causing the pandemic?

➤ **Maybe for validation**



Should we start an Environmental Monitoring Program that targets the agent that is causing the pandemic?

- Maybe for validation
- **Maybe because your employees would want you to**



Should we start an Environmental Monitoring Program that targets the agent that is causing the pandemic?

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- **Maybe because your employees would want you to**

What is a good worker?



Should we start an Environmental Monitoring Program that targets the agent that is causing the pandemic?

- Maybe for validation
- **Maybe because your employees would want you to**

Safe Worker = Happy Worker = Worker



Should we start an Environmental Monitoring Program that targets the agent that is causing the pandemic?

Environmental testing can show employees that the company does care/is doing all they can, and this perceived sense of safety can have a positive effect on the work-spirit and production.



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1d. **Employees?**

2. Should we modify the testing we are already doing?

2a. Raw ingredients?

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Should we test employees for the agent that is causing the pandemic?

- Yes. We should have a program for testing employees.
- The type of program depends on number of different factors that companies should evaluate by them self and tailor the final program to their needs based on the risk. Some of the factors to consider ...
 - When you have a case among employees
 - When employee has been in close contact with COVID-19 positive person
 - When employee works with a medical worker
 - When employee comes back from out of town/state travel
 - When coming back from medical procedure regardless if it is COVID-19 related or not.
 - When employee is or works with someone who is at higher risk of developing severe illness
 - Follow the cases in the community; respond with testing as needed



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SEARCH: go

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Institute for Food Safety at Cornell University

[The Coronavirus \(COVID-19\)](#) [Trainings](#) [Services](#) [Programs](#) [Resources](#) [News & Events](#) [Contact Us](#)

[The Coronavirus \(COVID-19\)](#)

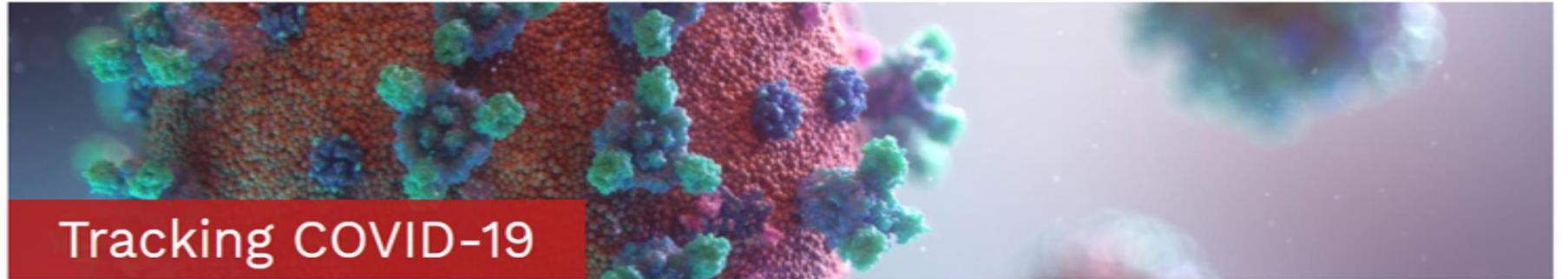
[Food Industry Resources](#)

[Consumer Resources](#)

[Background Info on COVID-19](#)

[Tracking COVID-19](#)

[Peer-Reviewed Papers](#)



[Home](#) / [The Coronavirus \(COVID-19\)](#) / [Background Info on COVID-19](#) / Tracking COVID-19

Tracking COVID-19 Cases by Country

- Visit this page from [Johns Hopkins](#) to find a Global tracker. This tracker includes an interacti





Statewide

Total Persons Tested
9,530,416

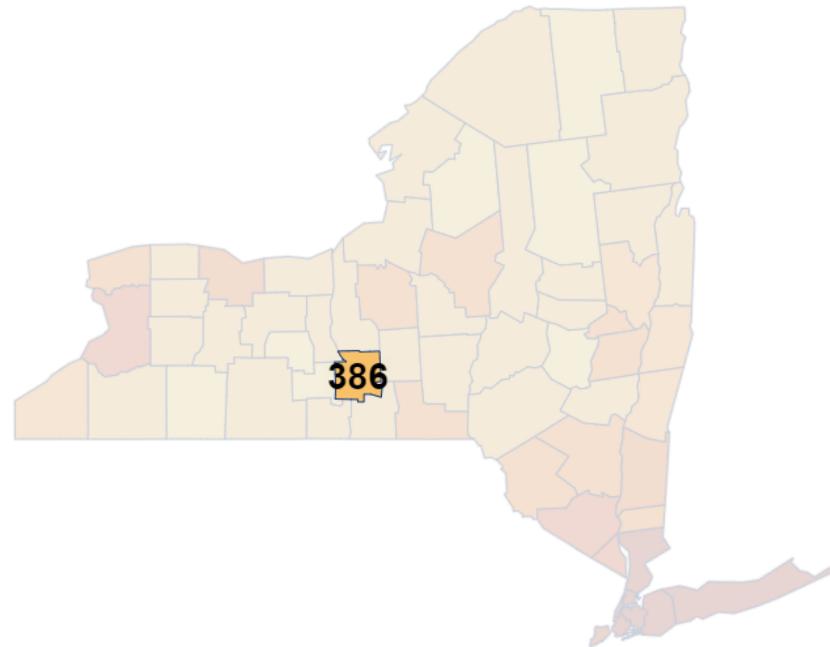
Total Tested 9/15
75,087

Total Tested Positive
446,366

Sex Distribution of Positive Cases

Female	Male	Unknown
49.0%	50.2%	0.8%

Persons Tested Positive by County



- 01-99
- 100-499
- 500-999
- 1,000-4,999
- 5,000-9,999
- 10,000-14,999
- 15,000-19,999
- 20,000+

Click County to See Detail

Click Again for Statewide

Oswego	409
Otsego	318
Putnam	1,565
Queens	71,309
Rensselaer	887
Richmond	15,642
Rockland	14,660
Saratoga	970
Schenectady	1,362
Schoharie	83
Schuyler	33
Seneca	104
St. Lawrence	310
Steuben	334
Suffolk	45,843
Sullivan	1,561
Tioga	221
Tompkins	386

County Stats: **None**



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FDA & CDC Guidelines for food production/processing facilities and farms

For workers potentially exposed to someone with COVID-19, employers should:

- Check temperatures and assess symptoms.
- If no fever (> 100.4 F) or symptoms, self-monitor during the shift.

As a general good practice for all workers, employers should:

- Use employer-approved face mask or cloth face covering at all times.
- Practice social distancing or have engineering solutions in place.
- Handwashing.
- Clean and disinfect workplaces/stations at frequent intervals.



CDC-Testing Strategy for Coronavirus (COVID-19) in High-Density Critical Infrastructure Workplaces after a COVID-19 Case Is Identified

Early experience from COVID-19 outbreaks in a variety of settings suggests that when symptomatic workers with COVID-19 are identified, there are often asymptomatic or pre-symptomatic workers with SARS-CoV-2 present at the workplace. Testing is important to identify such individuals, as they may not know they are infected.

<https://www.cdc.gov/coronavirus/2019-ncov/community/worker-safety-support/hd-testing.html>



If we are testing employees; what kind of test should we use?

Test for Current Infection (Diagnostic testing/Virus testing):

- Performed on nasal/throat swabs, or on saliva
- Targeting either (i) viral RNA or (ii) viral proteins (antigens)
- Antigen test simpler/quicker/less accurate and may need confirmation

Test for Past Infection (Antibody testing/Serologic testing):

- Performed on blood samples
- Targeting antibodies that appear in the body as a result of virus infection
- Different antibodies appear 1 to 3 weeks after first symptoms appear
- How long the antibodies remain present is not clear
- Does presence of antibodies indicate immunity is also not clear



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→ 2a. Raw ingredients?

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Should we modify the testing of Raw Ingredients during pandemic?

Maybe. Probably?

- Are you getting the raw ingredients from the same approved supplier as before the pandemic?
- What is the COVID-19 status of your supplier?
- Is your supplier located in any of the COVID-19 hotspots?
- How are ingredients transported to you?
- ...



Should we modify the testing of Raw Ingredients during pandemic?

For example: You are getting your Spices from Brazil.

A world leader in infections and deaths.

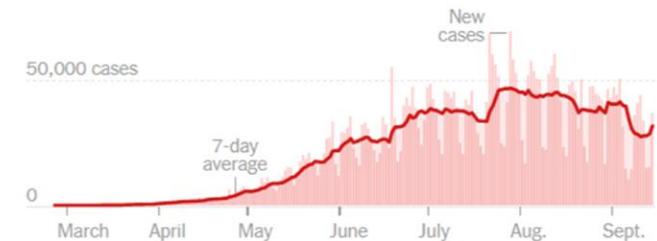
Latin America became an epicenter of the coronavirus pandemic in May, driven by Brazil's ballooning caseload, as the number of known infections in Europe fell. Six months after its first known case, Brazil has had at least 4.1 million cases — more than all of Europe — and over 126,000 deaths.

<https://www.nytimes.com/article/brazil-coronavirus-cases.html>

39 | 11/16/2020

Brazil Covid Map and Case Count

By The New York Times Updated September 16, 2020, 12:15 P.M. E.T.



	TOTAL REPORTED	ON SEPT. 15	14-DAY CHANGE
Cases	4.3 million+	36,653	-22% ↘
Deaths	133,119	1,113	-6% ↘

Includes confirmed and probable cases where available. 14-day trends use 7-day averages.

<https://www.nytimes.com/interactive/2020/world/americas/brazil-coronavirus-cases.html>



Should we modify the testing of Raw Ingredients during pandemic?



Food fraud rise 'inevitable' because of COVID-19

By Joe Whitworth on May 22, 2020

Food authenticity experts have said an increase in food fraud is inevitable because of the coronavirus outbreak.

<https://www.foodsafetynews.com/2020/05/food-fraud-rise-inevitable-because-of-covid-19/>



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Should we modify the **Environmental monitoring** during pandemic?

YES!

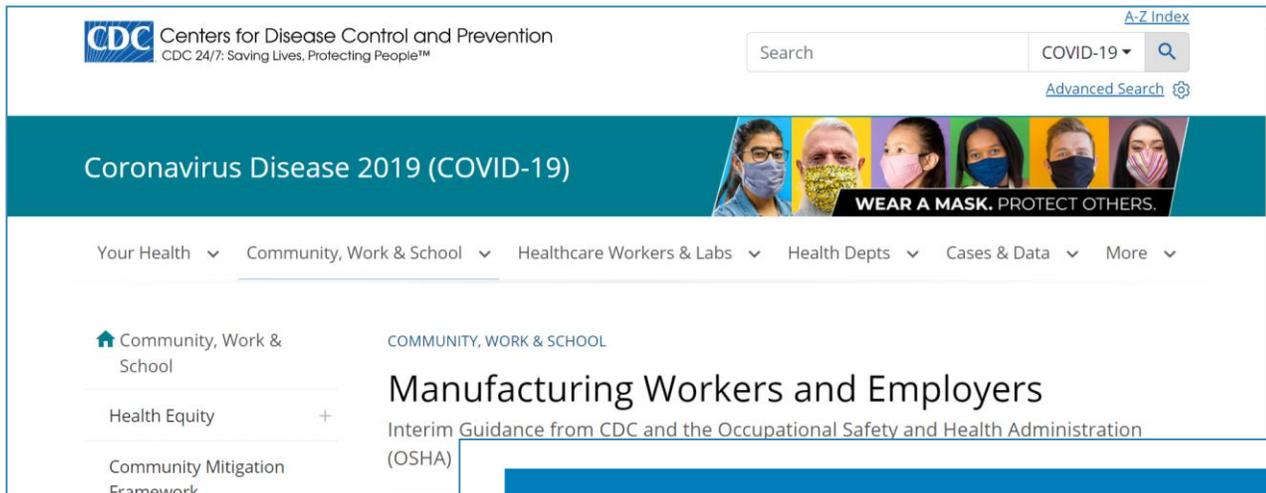


Should we modify the **Environmental monitoring** during pandemic?

CDC/FDA Guidelines

<https://www.cdc.gov/coronavirus/2019-ncov/community/guidance-manufacturing-workers-employers.html>

<https://www.fda.gov/media/141141/download>



The screenshot shows the CDC website interface. At the top left is the CDC logo and the text 'Centers for Disease Control and Prevention CDC 24/7: Saving Lives. Protecting People™'. To the right is a search bar with 'COVID-19' entered and a magnifying glass icon. Below the search bar is a navigation menu with options: 'Your Health', 'Community, Work & School', 'Healthcare Workers & Labs', 'Health Depts', 'Cases & Data', and 'More'. The 'Community, Work & School' section is expanded, showing a sub-menu with 'Community, Work & School', 'Health Equity', and 'Community Mitigation Framework'. The main content area displays 'COMMUNITY, WORK & SCHOOL' followed by the title 'Manufacturing Workers and Employers' and the subtitle 'Interim Guidance from CDC and the Occupational Safety and Health Administration (OSHA)'. A banner at the top of the content area features a row of six people wearing face masks and the text 'WEAR A MASK. PROTECT OTHERS.'

**Employee Health and Food Safety
Checklist for Human and Animal Food
Operations During the COVID-19 Pandemic**

FDA U.S. FOOD & DRUG
ADMINISTRATION

OSHA Occupational
Safety and Health
Administration

Food and Drug Administration (FDA) and Occupational Safety and Health Administration (OSHA)



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<https://www.fda.gov/media/141141/download>

Employers may determine that modifying production or assembly lines and **staggering workers across shifts** would help to maintain overall manufacturing capacity while measures to minimize exposure to SARS-CoV-2 are in place. For example, **a plant that normally operates on one daytime shift may be able to split workers into two or three shifts throughout a 24-hour period.** Depending on the items processed or manufactured in a particular plant, one shift may need to be reserved for cleaning and sanitization. Alternatively, workers could clean and sanitize their shared workstations at the beginning and end of their shifts.



Should we modify the **Environmental monitoring** during pandemic?

CDC/FDA Guidelines

<https://www.cdc.gov/coronavirus/2019-ncov/community/guidance-manufacturing-workers-employers.html>

<https://www.fda.gov/media/141141/download>

- Modify the alignment of workstations, including along production or assembly lines, if feasible, so that workers are at least 6 feet apart in all directions (e.g., side-to-side and when facing one another), when possible.



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<https://www.cdc.gov/coronavirus/2019-ncov/community/guidance-manufacturing-workers-employers.html>

<https://www.fda.gov/media/141141/download>

- ... use physical barriers, such as plexiglass or other impermeable ... dividers or partitions, to separate workers from each other



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<https://www.fda.gov/media/141141/download>

- ... provide unidirectional paths through the operation, ... including stairs, hallways, and cafeterias, to reduce contact in narrow areas



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CDC/FDA Guidelines

<https://www.cdc.gov/coronavirus/2019-ncov/community/guidance-manufacturing-workers-employers.html>

<https://www.fda.gov/media/141141/download>

- ... use floor markings to show proper distancing and floor traffic directions



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<https://www.fda.gov/media/141141/download>

- ... identify alternative areas to accommodate overflow volume, such as training and conference rooms, or use outside tents for break and lunch areas
- ... consult with a heating, ventilation, and air conditioning engineer to ensure adequate ventilation and/or adjust ventilation in work areas to help increase circulation of outdoor air as much as feasible ...



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<https://www.fda.gov/media/141141/download>

- Develop and implement, if necessary, plans to continue essential business functions in cases of higher than usual absenteeism.



Should we modify the **Environmental monitoring** during pandemic?

YES!

- Re-evaluate your Environmental Monitoring Plan.
- Increase the frequency of when the Environmental Monitoring Plan is re-evaluated.
- Enhance your Environmental Monitoring Plant



Key Questions and Decisions for the Food Industry:

1. Should we test for the agent that is causing the pandemic?

1a. Raw ingredients? **NO**

1b. Finished Product? **NO**

1c. Environment? **NO, MAYBE**

1d. Employees? **YES**

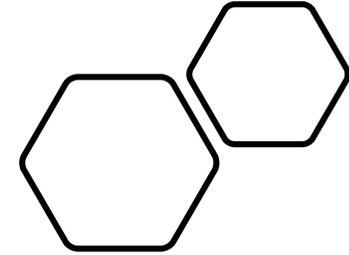
2. Should we modify the testing we are already doing?

2a. Raw ingredients? **MAYBE, YES**

2b. Finished Product? **MAYBE, YES**

2c. Environmental monitoring? **YES**

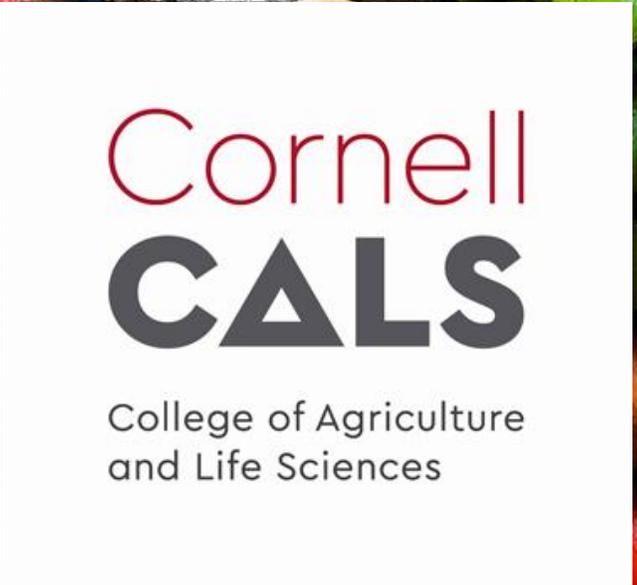




Thank you!

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Testing During Pandemic

A guided tour through questions and decisions for the Food Industry

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