

# Food Packaging and COVID-19

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## ABSTRACT

During the first wave of COVID-19 where around 30 000 people died in just a few weeks in nearby countries notably in Italy. Researchers began to assess the mode of transmission of the virus in the air and in the microparticles suspended in the air, in wastewater, and on food packaging and in the food itself. As soon as food retailers learned that the virus could be found on their shelves, they decided to start testing COVID-19 on food products, on shelves and any other surface where the virus may have been found. But at the same rate as the demand for testing increased, it soon afterwards fell. After initially reporting that COVID-19 can survive on frozen food, said the likelihood of getting infected by touching food is very low. This paper is a specific descriptive study on the effect of food packaging during the COVID-19 pandemic and consumer expectations in terms of food safety.

**Keywords:** COVID-19, safety, food packaging



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## INTRODUCTION

COVID-19 is not a foodborne illness [1]. The first reported cases were from a wet market in Wuhan, China, which suggests food was suspected. As with any emerging pathogen, little was known about the ecology of SARS-CoV-2, although the behavior and characteristics of the virus can be predicted based on data from similar viruses such as those responsible for Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS). Because the previous coronaviruses that caused SARS and MERS were not considered foodborne, it is reasonable to assume that SARS-CoV-2 is not foodborne either. The risk of transmission of COVID-19 through food consumption is negligible (they were careful not to claim it was zero risk) [2]. Yet many food producers, primarily in the meat sector, have been forced to shut down due to the spread of COVID-19 in their facilities and among their handlers. The lack of safety rules in place, the difficulty of maintaining close physical distance and the high humidity environment are among the reasons cited for these business disruptions.

### Survival of SARS-CoV-2 in the Environment

Numerous articles report the survival of SARS-CoV-2 on different surfaces, even on frozen foods. Because the test performed to discover the virus on these surfaces is a molecular test and the replication of a target sequence, drawing conclusions about survivability is highly speculative, if not false and misleading. At this time, there is no in vitro cell test to assess the virulence of SARS-CoV-2 isolates, nor do we have the capacity to grow one in the laboratory to perform survival tests.

The USFDA issued an initial statement on the low frequency of surface contamination, which was later confirmed in an August 2020 Lancet publication [3].

### TRANSMISSION FROM FOOD PACKAGING

COVID-19 is not considered a foodborne illness and surface contamination is unlikely to be a significant source of contamination. However, food industry players are testing their surfaces to detect the presence of SARS-CoV-2, which is the cause of the current pandemic. This article emphasizes the importance of the detection of SARS-CoV-2 in a food processing facility and the corrective and preventive actions that can be considered in the event of detection of the virus. We conducted our specific COVID-19 descriptive study on consumer expectations at the end of March 2020, and we reproduced it in December 2020 to try to analyze a

possible relationship between the pandemic and food packaging. If necessary, understand the impact on consumer perception and the packaging of their food. Due to the sensitivity of the food security component during this pandemic and faced with the state of global panic on the means of transmission of the virus and especially the efficient means of fight, the food industry, throughout the world, has been obliged, to also have emergency plans in place (Food surveillance system actors like the International Commission on Microbial Specifications in Foods (ICMSF) corroborated that of the United States Food and Drug Administration (USFDA) and the European Food Safety Authority (EFSA) as well as the World Health Organization (WHO) prescriptions) [2,4]. Molecular test kits for testing surfaces in the food processing environment. Test only because you have the capacity to do so rather than pre-considering the consequences of a positive test result. If so, can undoubtedly have counterproductive consequences. It is therefore necessary to understand what a negative or positive result can imply, the consequences of one or the other of these results and the relevance of the tests to monitor the control measures in place when deciding to establish a SARS-CoV-2 surface testing regime. A risk management approach was therefore mandatory, especially since no resemblance could really be drawn from previous risk assessments [5].

### FOOD PACKAGING AND THE CONSUMER

The results of the field survey made it clear that consumers fearful of the health impacts of COVID-19 on their lives, they want the packaging to be safe, sustainable, and they want the packaging to meet their expectations. Health security is critical during this period. In fact, we tell you our observations below:

- 73% of consumers say that packaging that guarantees product safety has an impact on product satisfaction, the same observation at the start and at the end of the investigation during COVID-19.

- 78% say that packaging products using materials that protect them have an impact on brand confidence over 8% compared to early March 2020 (70%).

- We also found that only 4.13% of consumers agreed that it is important for brands to balance and combine health safety and at the same time concern for the environment when designing their packaging products. Many of the characteristics described in sustainability have more impact today than were before COVID-19.

We have noticed that consumers are not prepared to sacrifice safety for the sustainability of their food packaging.

- To this end, 34% say that packaging that can be easily reused or reused has an impact on product satisfaction (up 14 percentage points from 20% in March 2020). Finally, several characteristics linked to the aesthetics of packaging have made it possible to observe significant gains in impact on consumers' purchasing decisions.

Another area that saw significant gains during COVID-19 in Algeria was e-commerce. With this in mind, consumers say that the unique shape or appearance catches their attention (+9% for online purchases and more 10% for classic in-store purchases).

## THE TREND OF FOOD RECALLS DURING THE COVID-19 PANDEMIC

Food recalls HAS become very common during the COVID-19 pandemic. Knowing that the rapid alert system for food and feed (RASFF) is based on reasoned sampling and that the database does not publish only positive results [6], we have examined in this paper the trends of recalls for the first three quarters of 2020. The annual RASFF alerts have increased in recent years and this trend is even clearer if one only considers notifications related to the presence of pathogenic microorganisms. By comparing; the first three quarters of each year, it is likely that 2020 shows a relatively weak trend in alerts over the last decade. This decrease may be an evolution positive and is likely related to the increase in hygiene and sanitation practices implemented against COVID-19, but it may equal be interpreted negatively if the lower number of alerts is a direct consequence of a reduction or suspension of on-site inspections given the sanitary containment measures.

### Activities

In this sense, In the second quarter of 2020, there was a decrease in RASFF notifications, a trend not observed in 2018 and 2019. The drop in the second quarter of 2020 may have been a consequence of the lockdowns linked to the pandemic and containment maneuvers established in various countries shortly before the second quarter. In the same vein, a sharp drop in alerts in the 2<sup>nd</sup> quarter of 2020, followed by a recovery in the following quarter. The percentage ratio between the type of alert in a specific quarter and the total number

of notifications in that same quarter shows that, if the alerts of the 2<sup>nd</sup> quarter of 2020 are in line with the average of the same semester for 2018 and 2019 (29.1% vs. 29.8%). This decrease may be due to sanitary confinement measures and traffic restrictions. On the other hand, there was a strong increase in information and in 2<sup>nd</sup> semester 2020 compared to the average of the same quarters in 2018 and 2019 (42.3% against 30.6%), showing that, although inspections decreased, an attempt was made to maintain high attention.

## CONCLUSION

It is important to take a proactive approach in monitoring the food processing environment which is often considered to be an important part of the food safety control system. Recent foodborne illnesses have been shown to be caused by poor conditions in the processing environment [7]. The same approach should be valid for testing surfaces for the presence or absence of SARS-CoV-2. Indeed, the priority should now be to use the basic elements of food safety to ensure the fitness for work of those handling the food. SARS-CoV-2 cannot increase in numbers outside the human body. Strict hygiene measures should be in place to ensure the safety of food handlers. These measures also protect against SARS-CoV-2 [8]. Food business operators encouraged to improve security measures to protect key personnel. Staff working in food premises should receive written instructions and training on how to prevent the spread of COVID-19. The usual fitness for work procedures employed by food businesses as part of their FSMS should ensure that infected workers are excluded from food premises. Testing surfaces for the presence of SARS-CoV-2 is a reactive approach [9]. If a positive result is detected, it means that a transporter has entered the premises of the facility and presents a risk of transmission, not to food, but to other food handlers. When the decision is made to put in place a SARS-CoV-2 surface testing regime, a mitigation plan should be planned and prepared in the event that testing yields positive results. It would be totally irresponsible to start the tests without anticipating possible corrective and preventive actions. Preparation is a fundamental part of crisis management.

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