Editorial Article

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Novel Coronavirus 2019 (COVID-19): Important tips on food safety

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Coronaviruses include viruses that cause colds and seasonal flu. COVID-19 belongs to the Coronaviruses family that causes acute respiratory involvement. Diseases such as Severe Acute Respiratory Syndrome (SARS) and Middle Eastern Respiratory Syndrome (MERS) are also part of the Coronavirus family. COVID-19 is a new strain of this virus that has not been previously identified in humans and was first detected in Wuhan, Hubei Province, China (1). Food contamination can occur through the hands, sneezing and coughing of workers responsible for the preparation and packaging of food, and according to the World Health Organization's findings, consumption of contaminated raw and unclean food can cause human disease (2).

Traditional and modern methods of inactivating viruses in food

Many of the advanced and traditional methods used to control and inactivate the level of viruses in food are listed below;

A. High-temperature heating (70°C) can inactivate viruses, including the Coronavirus. The Coronavirus is active and stable even at -20°C or less for 2 years. Storing food in the refrigerator (4-8°C) does not disable the Coronavirus (3).

B. Food-borne viruses can be inactivated by irradiation at doses from 2.7 to 3.0 kGy (spices, fruits and vegetables) (4).

C. Ultraviolet light (245-285 nm) can protect some foods such as juices, milk, egg, fruits and vegetables surface (3).

D. High-pressure processing (300-400 MPa and 5-22°C for 5 min, depending on the type of virus) results in the inactivation of viruses in foods such as fruit juice, shrimp, fish and ready to eat cooked meats (5, 6).

E. Using chlorine (0.5 mg/L), ozone gas (concentration of 20–25 ppm) and chlorine dioxide (2.19 mg/L) or 0.1% sodium and calcium hypochlorite for 1 min can inactivate the virus in water and the surface of some food packaging (3, 7-9).

People's behavior regarding food safety when purchasing and consuming food

Purchasing from crowded stores must be inhibited, due to social distancing from each other (10).

When removing food packages from store shelves, you should use latex gloves (10).

Bread coming out of the oven is completely safe but may be contaminated by bread crumbs and knives, so it is advisable to avoid slicing the bread. Also, place it in a personal bag (11). Pre-heat traditional and industrial bread by microwave, toaster or by traditional method (inside the pan) before consumption (11).

Raw milk and other pasteurized milk are better to be boiled before use and do not use traditional dairy products (12).

Vegetables and fruits must be washed thoroughly in a container containing water and disinfect them, then transfer to the refrigerator. Wash the packages (washable) which have been purchased from the market with water and disinfectants at home (11).

Raw and partially cooked foods must be avoided, especially meat, meat products, eggs and milk and its products (10, 12).

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Do not purchase nuts (Persian common name Ajeel & Tanagholat) in Persian New Year (Nowruz). If you purchased them, roast them at home and then consume (10). Inactivate the virus in dried fruits by microwave oven, which have been purchased from the market before consumption (11).

Regularly clean and disinfect surfaces at your home and kitchen, especially areas that are food contact (10).

Use whole organic foods with good amounts of leafy vegetables and fiber-rich foods (legumes, whole grains, beans, vegetables). Add a lactobacillus probiotic approved source such as commercially available probiotic dairy products to the everyday diet, since the probiotic bacteria may bind directly to the virus and inhibit virus attachment to the host cell as well as improving the immune system function of the human body (13).

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