

# Food processing and technology in a world in need of increasing quantity of food, with higher nutritional quality

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## Editorial

Probably the first use of food processing by human beings occurred about 780,000 years ago, involving the use of fire to cook food. By liberating much energy and facilitating digestion and absorption of nutrients, food cooking became a revolutionary processing that enabled a gradual growth of the human brain, which deviated our evolutionary line among other primates, and eventually turned us into what we are today.

MOJ Food Processing & Technology (MOJFPT) is one of the journals in the area of Food Science, encouraging researchers to publish papers dealing with aspects of food processing and technology. Nearly all food consumed today, in virtually all parts of the world, passes by steps of processing. Contemporarily, food processing and technology face a multitude of challenges. One of the most obvious is the formidable size of the human population, which has already reached 8.2 billion people and is expected to grow up to 10.3 billion by the mid of 2080's.

Food processing and technology are essential to meet the needs of increasing amounts of food, not only for the ever increasing human population, but also for their domestic animals, including livestock and pets. At the same time, food processing and technology must take into account the demands by the society and the markets for foods with ever increasing qualities of packaging, health safety, variety, flavor, palatability and shelf time, as well as nutritious positive characteristics. Among the latter, developments in food processing need to concentrate focus in diseases that are aggravated by food processing, such as obesity, diabetes, atherosclerosis and high blood pressure. On the other hand, food processing and technology are expected to add quality by enriching foods with vitamins, proteins and lipids, including omega acids.

Food processing and technology can do much to increase the variety of raw material used in processing food for humans and domestic animals. Given the diversity of plants and animals, it is amazing how little of this diversity has been used as food. Only in relatively recent years attention has been directed to food plants that ancient civilizations used regularly in their diet. Quinoa is one of these foods, included among the "superfoods" derived from pre-Colombian people, that only a few decades ago was introduced in the diet of people in many countries. Also, material from animal origin, for example whey protein, has recently been introduced in the complementary food market, with many possibilities aiming the enrichment of processed foods. In this context, attention may be directed to the unconventional food plants (UFP), which have been consumed by traditional people and remain practically unknown to most people and food scientists.

Much may be explored in this area, including the research aiming to evaluate the contents of major nutrients, vitamins, minerals, and other nutritional factors, as well digestibility and potential intoxicating components. In case of attainment of positive results, food processing and technology have much to do, aiming the processed of UFP-derived products. Many foods derived from plants and animals are unpalatable in their raw state, a reason why knowledge accumulated in the research of food processing and technology is needed to add value to UFPs. This could represent a stimulus to agriculturists to introduce the large-scale cultivation of several UFPs, some of which are known only as weeds. Due to the increasingly severe climatic problems, production of meat has turned out a matter of great concern, due to the release by bovines of methane (one of the known greenhouse gases). Many specialists consider essential that humans reduce the consumption of meat.

Alternatives have been suggested to replace meat as protein sources in human diet, e.g. ants and locusts, which have been consumed traditionally as food by people from several parts of the world. Because consumption of these arthropods as food is rejected by people from many other regions, food processing and technology would be essential to convert material from these animals in food with characteristics of aspect, palatability and flavor acceptable by people anywhere in the world.

Given the high proportion of people (one in nine) living under conditions of food insecurity, it is amazing to realize that one third of all the food produced in the world is never consumed. Actions are being developed under the guidance of government authorities and organizations in several countries, aiming to collect food to

be discarded from supermarkets and restaurants, but still in good condition of consumption. Much may be done in this regard, aiming improvements in food transportation and storage. Food processing and technology may also provide valuable contribution in this regard, by finding solutions to reduce food waste, by means of the development of technology capable of adding value to waste streams.

Despite the enormous growth of science and technology along the two last centuries, allied to advances in food production derived from the Haber-Bosch process, food insecurity persists as a severe burden for humanity. In several parts of the world, for example in Brazil, hunger is not a consequence of food unavailability in the country. Many people face food insecurity in Brazil mostly because of low family incomes. For this reason, food processing and technology could alleviate the problem of food insecurity by developing processes aiming to reduce the costs of production and packaging, and thus allowing access to food by people in the lowest social economic strata.

Food processing and technology are relevant in the development of several countries, due to their influence on the economic growth, income and creation of jobs. The development of food processing contributes to create job opportunities in industrial and agricultural sectors. In countries with high populational proportions in rural areas, food processing and technology represent incentives to increase the rate of employments in agro farming sectors, and thus contribute to reduce both local poverty and food insecurity.

MOJFPT encourages submission of reviews and original papers dealing with any aspect of food science, in particular papers related with food processing and technology. The authors of the published papers enjoy the privilege that their publications have free access by potential readers, and are indexed in the Web of Science, Scopus and other important scientific platforms.