

## Seasonality in human diet: from production to nutritional status

**A. André<sup>1</sup>, S. Rodrigues<sup>2</sup>**

<sup>1</sup> Department of Public Health, Faculty of Medicine, University of Porto, Portugal.

<sup>2</sup> Department of Nutrition, Faculty of Nutrition, University of Porto, Portugal.

The seasons determine the availability of food that dominates the life of most none equatorial species. For humans, the influence of seasonality begins in the food production, since the vast majority of plant species and many species of animals used for human consumption are subject to an "agricultural calendar" imposed by the succession of the seasons, modifying the availability for sale, acquisition or, ultimately, food consumption and its consequences on nutritional status.

The aim of the present study was to identify and discuss the relevant literature about the implications of seasonality in the human diet.

A systematic literature review, using the search terms "season\* AND (food supply OR food access OR food availability OR food consumption)" was performed in PubMed, ISI and Scopus databases, subsequently completed with snowball search in Google Scholar.

The results showed that it is generally accepted that the consumption of foods "in the season" is more advantageous, as arguments showing the lowest price, best organoleptic characteristics (specially taste) and nutritional value optimized, which are also factors that influence the household purchase and availability of food.

In developed countries it is possible to produce and market food "out of season" using agro-industrial techniques more or less sophisticated, but most of the fresh food produced, sold and purchased by households in any country is still subject to seasonal changes.

Although scarce, there are studies that showed clear seasonal influence on purchase of foods such as fruits and vegetables, even in urban areas and less developed countries.

Much more studies have showed marked seasonality in food consumption, which may be different depending on the social group, economic status and culture, and this is higher in less developed countries, where most families depend on the production of food for home consumption.

Not all of the different foods consumed are reflected in differences in energy and nutrient intakes, but some recent studies showed that there was clear seasonality in energy and nutrient intakes, and that may have greater or lesser impact on nutritional status according to the country and / or group studied. Again, there were the least developed countries and the poorest which showed higher energy and nutritional changes during the year, with higher impact on nutritional status.

Research on the influence of seasonality covers diverse aspects of the issue: from production and sale to purchase and household availability, and ultimately, to consume and individual nutritional status. However future research should focus on how seasons influence household food purchase and availability, as there are few studies on this area, but is also need more research with focus directly on the influence of seasons on food consumption.