FRUIT AND VEGETABLE CONSUMPTION HAS BENE-FITS REGARDLESS OF THE PRODUCTION METHOD

There are several production methods, and not only one. These depend on many factors, such as climate, soil, presence of diseases and pests, efforts to improve yield, quality, etc. Over the past decade, European agriculture has undergone major changes, in particular with the limit on the number of <u>plant protection treatments</u> (dose/frequency) that can be used to protect crops, and the use of alternative techniques. In practice, therefore, an entire range of production methods is used in conventional agriculture, along with a forward-looking approach to new crop protection methods.

These treatments, whether natural or synthetic, are designed to protect plants from various aggressions and ensure quantity, quality and safety while avoiding waste (therefore saving 30 to 40% of the world's harvests).

Most international scientific studies show that consumption of at least 400 g/d of fruit and vegetables (F&V), regardless of the production method, is beneficial to health and can reduce the incidence of chronic diseases such as cardiovascular disease, type 2 diabetes, certain types of cancer, etc¹⁻³. Up to 1.7 million lives could be saved each year with adequate fruit and vegetable consumption⁴.

Varieties and genotypes are the leading factors influencing the sensory and nutritional qualities of fruit and vegetables.

There are large variations in the characteristics of fruit and vegetables: **the factors with a predominant influence on the sensory and nutritional qualities of F&V are first and foremost the variety and genotype,** then the climate, agricultural conditions and the stage of ripeness at the time of picking⁵.

The production method is one of the factors that has the least impact on these criteria. The differences in sensory, nutritional and health qualities between organically and conventionally grown plants are shown in Figure 1.



FIGURE 1 : SENSORY, NUTRITIONAL AND HEALTH QUALITIES OF PLANTS OF ORGANIC AND CONVENTIONAL ORIGIN

SENSORY

• Little or no difference⁶⁻⁷

NUTRITIONAL

• Minor or extremely small differences⁸⁻¹⁰

- Macronutrients, fibre, minerals and trace elements: No major differences noted^{9,11-12}
- Antioxidants: Slightly higher concentrations in organically grown fresh produce:
 certain polyphenols¹²⁻¹³
 - certain carotenoids and vitamin C¹⁴

• Pesticide residues**

Organic agriculture (OA) products contain 30% fewer pesticide residues (in number) than conventional products¹¹.

The risk of finding synthetic plant protection product (PPP) in organic food cannot be ruled out due to their potential presence in air or soil (even though specific OA regulations prohibit the use of synthetic PPPs).

PPPs of natural origin are used in OA and therefore found in organic $F\&V^{\rm 15}.$

Bacteria

Equivalent risk: this mainly concerns plant-based foodstuffs contaminated by irrigation water, misting, etc.).

HEALTH

There are few scientific studies on the incidence of human pathogenic bacteria in OA production systems and products.

However, some studies have shown that organically grown vegetables have lower microbiological quality¹⁶.

Secondary metabolites

The safety of secondary metabolites with insecticidal or fungicidal action (produced by the plant when inputs are reduced) cannot be guaranteed⁹.

Mycotoxins (secondary metabolites from mould) can also grow in plants. Most publications indicate that there are no differences between organic and conventional products; however, some articles have reported mycotoxins – sometimes at higher levels than in conventional foods – in products of organic origin^{14,17.}

Reducing chemical inputs spurs the plant to produce: - beneficial antioxidant substances (polyphenols, etc.) - and secondary metabolites with insecticidal or fungicidal action

BOX 1: DOES THE PRESENCE OF **PESTICIDE RESIDUES**** CALL INTO QUESTION THE NEED TO EAT FRUIT AND VEGETABLES?

- Over the past few years, a scientific consensus has emerged in favour of the health benefits of daily consumption of F&V: most international scientific studies show that consumption of at least 400 g/d of F&V, regardless of the production method, is beneficial to health and can reduce the incidence of chronic diseases such as cardiovascular disease, type 2 diabetes, certain types of cancer, etc^{1-3.}
- An increase in F&V consumption to 600 g per day does not exceed the <u>Acceptable Daily Intake***14,18-20</u>.
- A Canadian assessment showed that the benefits of consuming F&V in terms of health and reduced cancer risk far outweigh the low risk of chronic disease associated with pesticide residues²¹.

BOX 2: RECOMMENDATIONS FOR YOUR PATIENTS - REASSURANCE

Encouraging the consumption of fruit and vegetables therefore remains a public health priority. The WHO cites low F&V consumption as one of the ten main risk factors for global mortality. Worldwide, it is estimated that inadequate intake of fruit and vegetables is responsible for nearly 19% of gastrointestinal cancers, 31% of ischaemic heart disease and 11% of strokes⁴.

- The main advice is above all to have or adopt good eating habits in order to follow international nutrition recommendations: consume more plant-based products (regardless of the production method) as they can protect against the risk of chronic noncommunicable diseases.
- Concerns about pesticide risks should not discourage people from consuming conventional F&V, especially people with low socio-economic status, for whom organic produce is less affordable.
- F&V are nutritionally valuable regardless of the form in which they are consumed (fresh, canned, frozen...)²².
- Residue levels can be further reduced before consumption: washing, blanching and cooking reduce them by a quarter, and peeling by more than half (Keikotlhaile BM, et al., 2010).
- The risks to consumers are different from those to operators, such as F&V producers applying plant protection treatments (dose levels, different routes of contamination: inhalation vs. ingestion).

*Plant protection treatments: definition in sheet 13b **Pesticide residue: definition in sheet 13b

***Acceptable Daily Intake (ADI): definition in sheet 13b









THE EUROPEAN UNION SUPPORTS CAMPAIGNS THAT PROMOTE A HEALTHY LIFESTYLE