

## #FruitVeg4You

### Nutritional Fact Sheet: Onion

#### Nutritional and Dietary Information

Although it is often consumed in moderate amounts, especially when used as a condiment, the onion has real nutritional values. It can provide significant amounts of vitamin C and “vitamin P” factors, many minerals and trace elements (including selenium, known for its immune properties and anti-oxidant qualities).

Onions have diuretic properties, apparently due to the presence of fructans (abundant in the bulb) and the high ratio of potassium to sodium. They have also beneficial effects on the cardiovascular system. The fresh onion inhibits platelet aggregation (by acting on different enzyme systems), which avoids the possible formation of clots, and protect against the risk of vessel blockage and stroke. Onions oppose also an excessive rise in blood sugar, due to some sulfur constituents (allyl disulfide and propyl) and a specific amine (DPA). Finally, a fresh onion prevents microbial growth and may even play an anti-bacterial role.



#### Principle characteristics

The nutritional composition of onions is similar to that of other vegetables. Onions have a high water content, which varies from 86 to 89% for “dry onions” and may reach 90 to 93% for fresh onions (white onions in the spring). It owes much of its energy intake (34 kcal per 100 g on average, 142 kJ) to carbohydrates. These are formed mainly by fructans, the sugar reserve of the plant. These carbohydrates, complex molecules made up of chains of fructose, are only partially assimilated. There are also glucose, fructose and sucrose, and small amounts of other carbohydrates (pentosans and hexosans) present. In total, carbohydrates represent about 7% of the mass of the onion. In white onions, which are richer in water, the rate of carbohydrate is a bit lower, as is the energy intake (25 to 30 kcal).

Proteins, fats and other energy components of the onion are present in very small quantities. Among the many minerals and trace elements, sulfur is the most characteristic one. It reaches 50 mg/100 g, and is among other substances responsible for the characteristic taste and odour of the onion. Sulfur is considered to be a factor limiting the digestive tolerance of food. There are also significant levels of potassium (170 mg/100 g), phosphorus (35 mg) and calcium (25 mg) present in onions. Relatively scarce trace elements are well represented, for example selenium, which is essential in the fight against cellular aging (0.001 to 0.010 mg/100 g; daily requirement estimated at 0.055 to 0.070 mg). Onions are one of the best vegetable sources of selenium. Onions also contain manganese, an activator of many enzymes and regulator of brain neurotransmitters (0.15 mg/100 g; daily need of about 4 mg); cobalt, which is anti-anemic as a co-factor of vitamin B12 (at a rate of 0.013 mg/100 g); fluorine, necessary for the proper condition of

teeth and bones (0.04 mg/100 g), and molybdenum (0.01 mg).

The vitamin C content of the onion is far from insignificant, as it reaches 25 mg/100 g in the white onion (fresh onion), and remains at about 7 mg in the “dry onion”, which is eaten all year round. The coloured pigments (yellow flavonoids polyphenols, anthocyanin substances of red or purple colour) give the different varieties their characteristic colour, and have “vitamin P” properties. They also potentiate the action of vitamin C (they increase the resistance of blood capillaries).

Many B vitamins are found in onions, at moderate rates. One can also note the presence of vitamin E (0.14 mg/100 g) and provitamin A (0.01 to 0.05 mg). Fibre, moderately abundant (2.1%), consists of both cellulose and hemicellulose (which form the walls of plant cells) and pectin and other colloidal substances (giving compounds mucilaginous consistency after cooking). This balance between fibres of different nature makes the cooked onion gently laxative, and well supported by the intestines.

### Nutritional Content

| Components    | (g)  |
|---------------|------|
| Carbohydrates | 7.10 |
| Proteins      | 1.30 |
| Lipids        | 0.20 |
| Water         | 89.0 |
| Fibres        | 2.10 |

| Minerals   | (mg)  |
|------------|-------|
| Phosphorus | 33.00 |
| Calcium    | 25.00 |
| Magnesium  | 10.00 |
| Sulfur     | 50.00 |
| Sodium     | 6.000 |
| Chlorine   | 25.00 |
| Boron      | 0.170 |
| Iron       | 0.300 |
| Copper     | 0.050 |
| Zinc       | 0.200 |
| Manganese  | 0.150 |
| Nickel     | 0.002 |
| Cobalt     | 0.013 |
| Chromium   | 0.001 |
| Molybdenum | 0.010 |
| Fluorine   | 0.040 |
| Iodine     | 0.002 |
| Selenium   | 0.003 |

| Vitamins         | (mg)  |
|------------------|-------|
| Vitamin C        | 7.000 |
| Provitamin A     | 0.010 |
| Vitamin B1       | 0.060 |
| Vitamin B2       | 0.020 |
| Vitamin B3 or PP | 0.300 |
| Vitamin B5       | 0.110 |
| Vitamin B6       | 0.140 |
| Vitamin B9       | 0.020 |
| Vitamin E        | 0.140 |

| Energy Intake |       |
|---------------|-------|
| KCalories     | 34.00 |