

Dry onion skin has a use

July 14 2011



The brown skin and external layers of the onions are rich in fiber and flavonoids.
Credit: SINC

More than 500,000 tonnes of onion waste are thrown away in the European Union each year. However, scientists say this could have a use as food ingredients. The brown skin and external layers are rich in fibre and flavonoids, while the discarded bulbs contain sulphurous compounds and fructans. All of these substances are beneficial to health.

Production of onion waste has risen over recent years in line with the growing demand for these bulbs. More than 500,000 tonnes of waste are generated in the [European Union](#) each year, above all in Spain, Holland and the United Kingdom, where it has become an [environmental problem](#). The waste includes the dry brown skin, the outer layers, roots and stalks, as well as onions that are not big enough to be of commercial use, or onions that are damaged.

"One solution could be to use onion waste as a natural source of ingredients with high functional value, because this vegetable is rich in [compounds](#) that provide benefits for [human health](#)", Vanesa Benítez, a researcher at the Department of Agricultural Chemistry at the Autonomous University of Madrid (Spain), tells SINC.

Benítez's research group worked with [scientists](#) from Cranfield University (United Kingdom) to carry out laboratory experiments to identify the substances and possible uses of each part of the onion. The results have been published in the journal *Plant Foods for Human Nutrition*.

According to the study, the brown skin could be used as a functional ingredient high in dietary [fibre](#) (principally the non-soluble type) and phenolic compounds, such as quercetin and other [flavonoids](#) (plant metabolites with medicinal properties). The two outer fleshy layers of the [onion](#) also contain fibre and flavonoids.

"Eating fibre reduces the risk of suffering from cardiovascular disease, gastrointestinal complaints, colon cancer, type-2 diabetes and obesity", the researcher points out.

Phenolic compounds, meanwhile, help to prevent coronary disease and have anti-carcinogenic properties. The high levels of these compounds in the dry skin and the outer layers of the bulbs also give them high antioxidant capacity.

Meanwhile, the researchers suggest using the internal parts and whole onions that are thrown away as a source of fructans and sulphurous compounds. Fructans are prebiotics, in other words they have beneficial health effects as they selectively stimulate the growth and activity of bacteria in the colon.

Sulphurous compounds reduce the accumulation of platelets, improving blood flow and cardiovascular health in general. They also have a positive effect on antioxidant and anti-inflammatory systems in mammals.

"The results show that it would be useful to separate the different parts of onions produced during the industrial process", explains Benítez.

"This would enable them to be used as a source of functional compounds to be added to other foodstuffs".

Provided by FECYT - Spanish Foundation for Science and Technology

Citation: Dry onion skin has a use (2011, July 14) retrieved 23 April 2024 from <https://medicalxpress.com/news/2011-07-onion-skin.html>

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