

The onion, a natural alternative to artificial preservatives

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Onions are a natural alternative to artificial preservatives. Credit: Santas et al.

Some components of the onion have antioxidant and antimicrobial properties, making it possible to use this bulb for food preservation. This is demonstrated by researchers from the Polytechnic University of Cataluna (UPC) and the University of Barcelona (UB) in a study that has just been published in the *International Journal of Food Science and Technology*.

"The antioxidant and antimicrobial properties of the flavonoids of the raw onion make it a good candidate for use in food preservation", researcher from the Department of Nutrition and Bromatology at UB and co-author of a project carried out in the Department of Agrifood Engineering and Biotechnology at UPC, confirms to SINC.

The study, that has just been published by the *International Journal of Food Science and Technology*, shows that the flavonoids of onion, in addition to having beneficial properties for health, increase the life of foods, and so "they are a natural alternative to artificial additives used in the food industry". Flavonoids are phenolic compounds (with the phenol group) which are synthesized by plants.

The results confirm that, especially the yellow variety, is "a good source of these types of substances, and there is a positive correlation between the presence of flavonoids and their [antioxidant capacity](#)".

"The onion can be effective for delaying lipid oxidation in emulsions of oil and water -a model system of foods like margarines and mayonnaises-, and it also inhibits the growth of microorganisms that alter foods", Santas indicates.

The scientific team analysed onions of the White varieties "Fuentes de Ebro" and "Calçot de Valls" and the yellow variety "Grano de Oro". Using them the researchers demonstrated that [phenolic compounds](#) in the onion prevent the development of bacteria such as *Bacillus cereus*, [Staphylococcus aureus](#), *Micrococcus luteus* and *Listeria monocytogenes*, microorganisms typically associated with the deterioration of foods.

Previous studies indicate that flavonoids have beneficial effects for health due to their antioxidant, anti-inflammatory, cardioprotective, vasodilatory and anti-carcinogenic properties, making it of special interest in the prevention of chronic illnesses, such as cardiovascular illnesses, and some types of cancer.

A more stable component

The [flavonoids](#) of the onion are more stable than some of its other components, such as sulphur compounds. Traditionally it was indicated

that these sulphuric compounds are good for the health, as they are responsible for the characteristic taste, aroma and lacrimogenic effects of the plant. These substances, which are very volatile and unstable, are released when the onion is damaged or cut.

The onion (*Allium cepa*) is one of the most cultivated and consumed vegetables on the planet (around 66 million tonnes in 2008, of which 1.1 million were produced in Spain, especially in Castilla-La Mancha), and one of the main ingredients of the Mediterranean diet.

More information: Jonathan Santas, María Pilar Almajano y Rosa Carbó. "Antimicrobial and antioxidant activity of crude onion (*Allium cepa*, L.) extracts". *International Journal of Food Science and Technology* 45 (2): 403-409, 2010.

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