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# A GLOBAL VIEW OF NATURAL ANTIOXIDANTS AND CHARACTERIZATION

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In recent years antioxidants of natural origin have experienced a boom, mainly due to the rejection experienced by synthetics and some experiments that question its safety. Polyphenols are the main group of these antioxidants. They have radical scavenging activity, which can be measured against various radicals (such as DPPH, AAPH, ABTS or hydroxyl, among others) as well as the power to reduce Fe (III), with simple methodologies that indicate the real possibility of delaying oxidation. However, this characterization is not enough. Therefore, we must work with food models that contain lipids (in general), as well as real foods (meat, fish ...) in which deterioration by oxidation may become the most important. In these model systems (or real) the measurements that must be made must work both primary and secondary oxidation, analysing the evolution over time at different temperatures. A detailed summary of mechanisms and methodologies will be presented.

On the other hand, it should be noted that a protection through active films, which incorporate natural antioxidants, can bring greater benefits to the food industry, since the release over time delays oxidation without the need to incorporate large quantities. These films can be edible or, at least, biodegradable, respectful with the environment. There are several ways to make active films (by organic synthesis, through biotechnology, by polymerization ...), as well as possibilities to characterize them (physical, thermal characterization, permeability, transparency, durability, biodegradability ...) and to measure both their diffusivity and their antioxidant effect. A summary of these methodologies will also be made.

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