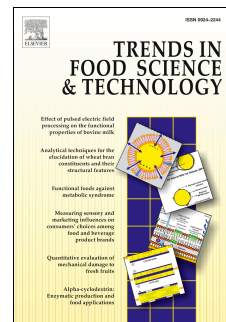


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**Antimicrobial potential of legume extracts against foodborne pathogens: A review**

M.C. Pina-Pérez\* and M.A. Ferrús Pérez

**TIFS 2017 363****ABSTRACT**

*Background:* Alternative protein sources are being investigated in response to increasing consumer demand for innovative and healthy food products of vegetable origin to replace non-sustainable animal exploitation. The Leguminosae family includes a wide variety of plants and nutritious seeds, very rich in protein with a high biological value, carbohydrates, vitamins and minerals. Not only the seeds but also the aerial parts, pods, hulls and roots have proved to be natural sources of antioxidants, and anti-inflammatory and antimicrobial compounds.

*Scope and Approach:* The present article overviews the antimicrobial potential of the most popular legumes worldwide against foodborne pathogens.

*Key Findings and Conclusions:* According to the literature reviewed, soybean and chickpea are the two consumed legumes with the highest antimicrobial activity. Long-chain soy peptides (IKAFKEATKVDKVVVLWTA) have a high antimicrobial potential against both Gram-positive and Gram-negative bacteria at a concentration level of 37.2 mM. Also, a wide spectrum of proteins and peptides in raw chickpeas and processed extracts have exerted antimicrobial activity against foodborne pathogens when applied in the range 8–64 µg/ml. These results open a new research line with good prospects regarding the development of a new generation of natural preservative ingredients and extracts to be included in novel formulated products. However, critical aspects, such as (i) the stability of antimicrobial activity during the shelf-life of newly formulated food products, and (ii) the microbial inactivation kinetics generated in novel matrices, should be covered prior to exploitation of legumes as sources of novel technological ingredients with antimicrobial potential.

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