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# Acorn: a devalued food with health benefits

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## INTRODUCTION

- Acorns are the fruits of Quercus trees and they have been playing a relevant role in the human diet across centuries, from ancient Native American Indians to modern Mediterranean countries.
- Acorns have been described as alternative functional foods, specially considering their high nutritional value and richness in bioactive phytochemical with biological action, contributing to the consumer well-being

## OBJECTIVES

This work aims to review the nutritional composition of the acorn and its nutraceutical properties with health benefits and to highlight the importance of promotion on acorn products.



## METHODS

A bibliographic review was carried out in databases: Pubmed, ScienceDirect, Elsevier in Portuguese and English, using the words: acorn, acorn flour, acorn and nutraceutical, acorn and health. This research has been limited from 2008 to 2018

## RESULTS AND CONCLUSIONS

Acorn fruits and its byproducts have a biological composition which confers attractive properties for the food and pharmaceutical products and its incorporation can **improve the nutritional characteristics and consumer's health** <sup>1,2</sup>.



### Minerals

Manganese + Cooper (90%), Iron, Magnesium, Phosphorous, Calcium, Potassium, and Zinc

✔ Improves formation of erythrocytes and controls metabolism of cholesterol and glucose

✔ prevent bone damage and improves brain function



### Fatty acids, sterols and aliphatic acids (~3%)

Oleic acid and  $\alpha$ -linoleic acid

Vitamin E and Provitamin A

Vitamin B3

$\beta$ - sitosterol and tetracosanol

✔ Decrease blood serum triglycerides and increase HDL-cholesterol levels

✔ Antimicrobial and antitumor activity



### Starch, fibers and other hydrocarbonates (~70%)

✔ Improves gut microbiota activity

✔ Antioxidant and cell protection effect

✔ Tolerated by celiac patients (gluten free)



Acorns have great potential as high value nutraceuticals for dietary supplements or functional foods and thus should be used for innovation / valorization in the industry.

Acorn Bioactive Health Roles

Anti tumoral

Anti bacterial

Anti oxidant

Prebiotic

Anti aging

Anti-inflammatory

### Selected bibliography:

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