



Acorns: a crop for the future

The acorns from oaks (*Quercus*) and tan oaks (*Lithocarpus*) have been used as food for many thousands of years. They occur in the early town sites in the Zagros Mountains and at Catal Huyuk (6000 BC) and were a staple food for many people until after AD 1900. Now they are used by only a few groups, most notably the Koreans — between 1 million and 2.5 million litres of acorns a year are harvested in the Republic of Korea. *Mook* is available in the United States at Korean delicatessens.

Acorns are a perennial "grain" crop that can play an important role in restoring degraded lands and feeding hungry and malnourished people. They provide up to 600 kcal and 8 g of protein per 100 g. They offer well-balanced amino-acids that are complemented by milk, legumes or meat, and they provide plentiful vitamin A (180 IU/g) and vitamin C (up to 55 mg per 100 g).

Many oaks will produce 500 litres of acorns per tree when mature. Acorn production of 3 500 kg a year is common in wild forests. Higher yields could be achieved in oak plantations. In many cultures, acorns were once the "grain" of choice. They can be again, in sustainable agroforestry systems.

Further study of all the oaks is needed to identify the sweetest, best-tasting acorns for food and the oiliest acorns for making acorn oil — which is very similar to olive oil.

Oak trees also provide fodder for animals (acorns and leaves); cork for insulation, bottle corks, and many other purposes; sugar from scale insects — the "manna from Heaven" mentioned in the Bible; food for wildlife, especially game species (deer, tur-

keys, and bears); erosion control; excellent shapes and colours for use in landscaping and for shade; a variety of hardwoods for use in furniture and manufacturing; excellent wood, including fuelwood; and food for silkworms. Oaks are also involved in several types of mushroom and fungi production, including shitake and truffles.

They could be used for land reclamation and agro-ecosystem development in many areas of the world. The various species can tolerate a very wide range of climatic and soil conditions, including very hot or cold climates, very saline or alkaline soil, and wet or intermittently flooded ground.

In the western United States, oaks were a vital element in the food chain for native Americans. They provided up to half a tonne of acorns a family every year. These could be gathered in 24 hours. They stored well, for several years, and made life easy.

Acorns contain ample amino-acids for nutrition in a balanced diet for people, cattle, pigs, sheep, and chickens. Unleached bitter acorns may cause problems if fed in high proportions, but leached and sweet acorns present none. Acorn meal tastes somewhat like peanut butter, corn meal and toasted almonds and can be mixed with flour in recipes as if it were corn meal.

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**ACORNS
AND ACORN MUFFINS**
a useful
food source