



# Rediscovering valonia oak acorns

Getting more income from your  
valonia oak trees

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## Why sustain valonia oak agroforestry systems?

Two valonia oak systems are present in Greece: ancient open forests (silvopastoral systems) and agricultural fields with valonia oak trees (agro-silvopastoral systems). Both have significant socio-economic, ecological and cultural value. They provide ecosystem services and support traditional uses including, grazing, acorn cup and nut collection, harvesting wood (for shipbuilding, firewood and charcoal) and collection of aromatic and medicinal plants.

Valonia oak forests are one of the habitats of the NATURA 2000 network and include monumental trees in many places in Greece. The harvesting of acorn cups for leather tanning rendered it a very important traditional economic activity up to 1970s, significantly contributing to the local economy. The average annual production of acorn cups in the past reached 14,000 tonnes. Most were exported as raw material or processed to produce powder, liquid or extract. In recent years, there has been a growing interest in reassessing the productive value of these systems within the context of acorn harvesting, organic agriculture and animal husbandry, as well as for environmental protection reasons. There is also increasing interest in the history of this traditional practice.



Valonia oak acorn (*Quercus ithaburensis ssp. macrolepis*)

## Why acorns today?

Demand for valonia oak acorn cups has recently increased. The traditional tanning and extraction industry is again returning to the use of natural, organic tanning substances in their production processes, replacing the chemicals that had formerly replaced natural tannins. There is also demand from yarn dyeing, cosmetics and pharmacology. High quality acorn cups may contain up to 20-30% tannin while content in the scales of the cups can vary between 30-40%. There is also increasing demand for acorn nuts for human consumption and use (e.g. as flour and oil). Acorn flour is gluten free with high concentration proteins, K, Mg, Ca, B6 vitamin and fibre.

Extracts are used in the pharmaceutical and fragrance sectors, and also in cooking due to their nutritional value. Valonia oak acorns also have a high value in animal nutrition in organic farming and contribute to the production of livestock products of high economic value.



Silvopastoral system (Xeromero forest- W. Greece)



Agro-silvopastoral system (Kea Island- Cyclades Greece)



## Advantages

- The harvesting of valonia oak acorn cups for tanning and nuts for flour can provide a supplementary income without incurring additional costs for their production.
- The acorn nuts and the rich herbaceous vegetation of the understorey constitute an important feed for livestock, especially sheep, goats, and free-grazing pigs. The high plant diversity of the valonia oak systems results in the production of high quality livestock feed.
- Ground covered by the dead organic material accumulated from the large canopy of the trees protects soil from erosion and helps groundwater recharge and infiltration.
- Valonia oak trees provide wildlife and domestic livestock with shelter, forage and shade during the summer, and conserve and increase ecosystem biodiversity.



Valonia oak sized acorns provide double profit: acorns are consumed by livestock and acorn cups are used for tanning.

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## Harvesting and storage

Harvesting commences from mid-July to mid-August with the collection of the immature and small acorns that have fallen prematurely. Acorn collection continues from late August to late September, when the seeds mature. Acorn harvesting is carried out using sticks to knock the acorns off the tree. Finally, the remaining acorns that fall to the ground are collected in the middle of autumn. (These are of lower quality.) The harvested acorns must not remain in sacks or heaps for a long time. After the separation of the acorns from their cups, which must be done immediately, acorns are spread out in sunny places on woollen cloths or cement surfaces for natural drying. During the drying process, they must be frequently turned around and protected from rain and moisture to avoid infection. They are then stored in well-ventilated and watertight rooms or warehouses until they are sold.

## Production yields and prices

A medium size valonia oak tree with a short trunk and wide crown can produce between 50-100 kg acorns cups, while a large-sized tree produces, on average, 128 kg of acorns cups in a productive year. A valonia oak tree starts production at an average age of 15 years after planting. In 2017, the selling price of quality dried cups started between 0.25 €/kg and 0.50 €/kg for dried nuts. Currently, acorn production does not meet the worldwide demand for oak extraction, dyeing and traditional tanning, and this shortfall in supply is likely to increase future prices.



Acorn harvesting by the "sticking" method in Kea (island of the Aegean sea). Ref: M. Mayer

## Further information

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