



# Protecting trees in chestnut stands grazed with Celtic pigs

Avoiding damage to young and old trees

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## Why graze pigs in chestnut stands?

Before ink disease destroyed trees growing below 400 m above sea level, chestnut stands had been the most broadly distributed tree in Galicia (NW Spain). Currently, chestnut stands occupy over 60,000 ha in Galicia, mainly located in the eastern mountainous areas of Ancares-Caurel Natural Park, where close to 100 varieties are still growing and providing chestnut fruits. However, the orography with steep slopes renders the harvest of chestnut fruit unprofitable due to the high labour cost.

In areas that are not profitable to produce chestnut fruit for human consumption, the Celtic breed of pig has recently been introduced to provide an alternative source of income. The high quality of the chestnut fruits as a fodder contributes to the production of premium pig meat, for which there is a large commercial demand in the region.



Tree bark worn by the effect of scratching by Celtic pigs.



Pigs in fruit fall season foraging for chestnuts and other feed

## Why do chestnut trees need protection?

Pigs can damage mature and even centenary trees found in protected natural parks. It is, therefore, important to evaluate and, where necessary, limit the damage that grazing with pigs can cause.

The type and extent of damage caused by pigs depends on stocking rates and tree age. When adequate animal general stocking rates are maintained damage to trees is usually most significant in areas where the animals spend most of their time.

Animals are usually retained close to places where feed and water are placed, thus creating a gradient of "stocking density" in large plots. We assessed damage to chestnut trees of different diameter size (37-91 cm) and at different distances from the feed and water, both with and without protectors.



Damage caused by biting

## Advantages

Tree damage was usually restricted to a limited number of trees in the plot. This is probably due to the special flavour of the bark, especially on smaller trees. Direct observation shows that pigs also scratch on specific trees.

Overall damage was negligible as the stocking rate was adequately controlled. Tree damage was lowest on trees located furthest away from feed and water points.

Damage was easily controlled by the protectors consisting of a 5 cm x 5 cm mesh.



Chestnut tree with a protector

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## Management

Adequate stocking rates will limit the general impact of pigs on trees, and protectors can be used when damage to individual trees is observed. Regular movement of available feed and water points can also help to ensure an effective use of plot resources, and also to reduce prolonged damage to trees. In areas where chestnut fruits are produced for human consumption, Celtic pigs can be introduced after harvesting to consume the remaining fruits as fodder. The potential reduction of future fruit infections, due to the consumption of infested fruit, is a likely benefit of grazing with Celtic pigs.

## Environment

Chestnut trees combined with Celtic pigs can help to preserve biodiversity in chestnut stands, as the highest number of herbaceous and woody species appear in the understory. Moreover, it increases the rate of nutrient recycling. Pigs consume the understory and produce ammonia in the urine. This probably increases chestnut production as competition with shrubs is reduced.

## Further information

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