

# PRODUCTION OF MEDICINAL AND CULINARY PLANTS IN AGROFORESTRY SYSTEMS

*Sambucus nigra* L.



## THE WHAT AND WHY

### Use of elder

The elder is a woody plant that appears naturally in almost all Europe, being present in cool, clear places and edges of mostly deciduous forests, with humid and rich soils regardless of their chemical nature. Elder can also be found close to human populations or livestock stables as it is favored by nitrogen-rich soils. It is a very versatile plant in terms of its practical use and possible economic returns. Wild collection is not enough to supply the market, so the interest of its cultivation is currently enhanced. It is an easy plant to grow as it reproduces well by staking. Elder can be established in both silvoarable and silvopasture systems. Galicia (NW Spain) already has experiences in the collection, cultivation and processing of flowers and elderberries (es.

carabunhas.com). The market of both the flower and the elder fruit and its different products increases every year providing a good perspective for their inclusion in silvoarable systems. It can be used for many purposes and both its flowers and ripe fruits are used in traditional medicine (diuretic, sudorific and emollient properties), respiratory conditions, flu, colds and mild laxative. Externally it is used to cope with dermatitis, wounds, burns, pharyngitis and conjunctivitis. The official European pharmacopoeia recognizes these properties. Ripe fruits can also be used for culinary purposes. The high vitamin C and flavonoid content of the fruits allows elderberry to be included in the so-called “super-foods” due to its antioxidant properties.



Sambucus silvopasture system  
a) Farm woodland forum  
b) Anna Regeslsberger



Sambucus fruit and flowers  
a) Edal Anton Lefterov  
b) Kurt Stüber

## HOW IS THE CHALLENGE ADDRESSED

### The elder potential market

The flower and fruit are collected in the wild populations of many areas of Europe, mainly Balkans, Poland and Russia. A study by the International Trade Center on certified organic plants collected in the wild estimated that, in 2005, about 472 t of elderberry, 19 t of elderflower and six t of elder leaves were harvested in the world. The estimated annual amount of dried elder flowers collected in Bosnia-Herzegovina was approximately 44 t (95 percent exported) and in Romania about 150 t of elder flowers and 40 t of elderberry are harvested wild annually (2003). The European Herbal Growers Association (Europam) stated in 2010 that older flowers and fruits remain among the largest wild medicinal plants in Bulgaria and Romania for export trade, herbal teas

domestic and phyto-pharmaceutical production. In Galicia (NW Spain) elderberry cropping/extraction is incipient ([www.centralgalaicadepplantas.es](http://www.centralgalaicadepplantas.es)). Countries such as Canada, US or Chile, where it is an introduced plant, are searching for more profitable and better quality markets, what is also needed in Europe. The demand for European elderflower and fruit with sustainability certifications (eg, Organic Wild and FairWild) recommends the cultivation of this plant. So there are already initiatives in UK or in the German regions of Rhön and Lower Franconia, where it is grown organically. In Galicia, crops are also being started ([es.carabunhas.com](http://es.carabunhas.com)) with a plot of 1 ha planning to reach 10 ha in the coming years.



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- The high potential market of Sambucus products makes it attractive for farmers all over Europe.
- Combination with livestock is possible to increase the profitability of the farms
- Adequate market channels and value chain should be established and promoted together with farmers cooperatives.



Sambucus products  
carabunhas.com

#### FURTHER INFORMATION

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## Sambucus pros and cons

### Advantages:

Elder is easy to cultivate both from establishment and maintenance point of view. Elder flowers and fruit production starts after 2-3 years of the plantation. The average plant life cycle from the plantation is more than 20 years. A distance of no more than 2 m between plants is sufficient to allow easy access to the fruits during harvesting. The rows can be kept less than 4 m away. These recommended distances between rows make possible the combination with grazing animals, which would increase the farmer profit per hectare. Maintenance costs are low, just an annual fertilization of 100 gr of 10-10-10 (N:P2O5:K2O) fertilizer compound per plant is recommended.

The growing demand for flower and fruit wholesale guarantees its sale. The possibility of processing the flower and the fruit in origin (jams, jellies, sweets, liqueurs...) increase the economic yield.

There are previous experiences, both in America, Europe and Galicia (NW Spain) that support the possible success of this economic activity.

### Disadvantages:

From a scientific point of view, there is a lack of studies to evaluate the existence of differences in production and quality in the plantation material (wild populations). The most productive and best quality would be those that should be cultivated.

Being a new crop it is still unknown the possible diseases that the plant can suffer in cropping conditions.

Like with any new use, some previous investments are needed and difficult to optimize.

The processing of the flower requires to have a dryer that guarantees non content variation in active principles responsible for its therapeutic activity.

For the processing of fruit, a destemmer is needed to separate the fruits from the peduncles as well as freezers. Usually the juice is extracted from the fruit and it is frozen until use.

If the fruit is going to be processed by the producer, it is necessary to foresee the type of product (jams, jellies, sweets, liqueurs) and have the necessary equipment to obtain these products: bottles, etc. In any case appropriate marketing channels and value chains should be established. If this activity attracts several producers, cooperatives should be promoted.

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