



Wild asparagus in olive orchards

Get more income from your orchard

www.agforward.eu

Why plant asparagus?

High yielding olive trees need plenty of light and need to be spaced apart. Hence both traditional and super-high-density orchards intercept no more than 50-55% of the sunlight. The rest will fall on the ground and encourage weeds. Why, then, not plant another crop you can sell under the trees, to use that light?

The understorey crop must be adapted to shade. One possible crop is wild asparagus (*Asparagus acutifolius*) which is a culinary speciality in the Mediterranean. The spears can be harvested and sold in local markets. Growing under the trees, the asparagus does not affect the olive yield, while producing an additional crop.



Wild asparagus in super high density olive orchard with plastic mulch



Asparagus in traditional olive grove

Where and how to plant?

Wild asparagus is a long-lived perennial plant that does not require annual tilling and this means that the olive orchard can be managed with no-till, permanent green cover. Wild asparagus is hardy and tolerates drought, winter cold and rocky soils. Therefore if the growing conditions are right for the olive, the wild asparagus can also thrive.

Few nurseries produce wild asparagus plants, but plants can be produced from seed. Seed can be obtained from the fruits gathered from wild asparagus in the autumn. After harvest, the black and shiny seeds must be stratified¹ in moist sand. Depending on the origin of the seeds it can take up to one year for germination to occur. The seedlings can then be transplanted into containers where they can be grown for another year before transplanting in the field.

Young asparagus plants can be transplanted along rows of olive trees leaving the inter-row free to allow the use of machinery for olive pruning and harvesting. If planting only in the tree rows, the wild asparagus plants are typically planted at about 33 cm spacing along the row. This provides about 4000 to 5000 asparagus plants per hectare. Alternatively if the olives are manually harvested, the asparagus can also be planted in the inter-row area. In this case the wild asparagus can be planted at 33 cm spacing within 1 m rows. This results in about 30000 plants per hectare.



Wild asparagus seeds (left) and fruits (right)

¹ Stratification is the process of putting alternating thin layers of seeds with layers of moist sand in a container with adequate drainage at the bottom. This is usually done outdoors so that the seeds are subjected to the winter cold followed by warm spring temperatures to break seed dormancy.



Advantages

Producing a second crop of wild asparagus under olive trees increases the productivity per unit of land, whilst requiring few additional inputs.

The process of weeding, fertilizing and possibly irrigating the asparagus can benefit the olive trees without additional costs.

With increasing volatility in the market prices for olive oil and the uncertainty associated with climate change, crop diversification can protect farmers from extreme crop failures. It is unlikely that both crops will completely fail in the same year.



Asparagus in traditional olive orchard with straw mulch

Adolfo ROSATI

adolfo.rosati@crea.gov.it

Consiglio per la ricerca in agricoltura e l'analisi dell'economia agraria (CREA)

www.agforward.eu

November 2017

This leaflet is produced as part of the AGFORWARD project. Whilst the author has worked on the best information available, neither the author nor the EU shall in any event be liable for any loss, damage or injury incurred directly or indirectly in relation to the report.

Yields of asparagus

A mature plant of wild asparagus will produce 50-100 g of harvestable spears each spring (March to May depending on local climate). With 5000 plants per hectare (transplanting only along tree rows), the yield can be 250-500 kg per hectare, starting from the second or third year after planting. With 30000 plants per hectare (transplanting in rows 1 m apart also in the olive inter-row space) the yield can be 1500-3000 kg per hectare.



A wild asparagus spear ready for harvest

Disease, pests and weeds

As a wild (non-selected) species, currently wild asparagus suffers from few pests and diseases. Hence it can be grown as an organic crop. However the asparagus beetle can cause some damage, but rarely needs treatment. Weeds can be controlled by carefully managing grazing animals, such as poultry or sheep.

Labour, harvesting and marketing

Wild asparagus cultivation is unlikely to interfere with olive pruning and harvesting, if the olive harvest is carried out by hand or using vibrating combs. The use of harvest "umbrella frames" is particularly suitable since the net is held above the asparagus vegetation.

Wild asparagus is a hardy crop, but it requires high levels of hand-labour particularly to harvest the asparagus spears and to control weeds. Hence although integrating olive trees and asparagus will increase the yield per unit of land, it will also increase the need for labour.

Asparagus spears can fetch high prices in local markets. However, marketing fresh and perishable produce is a difficult task that needs to be carefully evaluated.

Further information

Benincasa P, Tei F, Rosati A (2007). Plant density and genotype effects on wild asparagus (*Asparagus acutifolius* L.) spear yield and quality. *HortScience* 42(5):1163-1166.

Rosati A, Concezzi L, Dal Bosco A, Mugnai C, Paoletti A (2012). Video related to the results of a project on Olive, chickens and wild asparagus: www.youtube.com/watch?v=ALw73WwU-r2o/

Rosati A, Castellini C, Dal Bosco A, Mugnai C, Paoletti, A (2012). Manuale per la coltivazione consociata olivo, asparago selvatico, pollo rustico. Edizioni 3A-PTA. Researchgate: 10.13140/RG.2.1.3665.4805.

Rosati A. (2014). Coltivare asparagi selvatici e allevare polli in un piccolo oliveto. *Vita in Campagna*, 12: 44-48.