



Wild plants found in understory layer of montado areas used for essential oil distillation

www.eurafagroforestry.eu/afinet/

The amount of biomass available in the understory layer of montado systems may contribute for the increase of fire hazard. Mechanical operations for controlling biomass accumulation are costly for farmers, may contribute to increase soil erosion and damage tree superficial root. On the other hand, the understory layer of montado is characterized by a large diversity of wild plants that may be used for essential oil distillation, turning them into an extra income for the farm.

For instance, *Cistus ladanifer* distillation may have only a yield of 1,5 L/ton of plant, whereas *Foeniculum vulgare* may have 70-140 kg/ha. Since only some of the flowers and leaves need to be picked (sometimes the seeds too), this practice may coexist with other sustainable land uses such as apiculture and grazing.

The distillation of essential oils may be carried out by industrial or traditional procedures. Considering the latest, before going into the boiler the wild plants are cut into small pieces or shredded, depending on species. The pressure, time and yield of the distillation and also the yield can vary significantly: one hour at very low pressure (*Achyrocline* species), 7 to 8 hours (*Juniperus* sp), 12 hours at higher pressure in some species (*Cistus ladanifer*). The hydrolates and the essential oil are then filtrated. Although distillation can represent a significant extra income (values from 2011 for *Borago officinalis* L. reach 14,8 thousand €/ha) and its products are largely sought after by the cosmetic and pharmaceutical industries

(a variety of organic aromatic compounds), there is still little interest by the Portuguese national industry.

Frequently local producers mostly export their products or sell little quantities to small, traditional soap producers or similar.

Referencies and links:

http://www.eurafagroforestry.eu/pt-pt/afinet/events-news/Workshop_Destilacao_oleos_essenciais

http://www.cebal.pt/images/publicacao_pam.pdf



Figure 1. Wild plants being prepared for oil distillation. Credits: Raquel Almeida

Raquel Almeida

Joana Amaral Paulo

Centro de Estudos Florestais (Instituto Superior de Agronomia)