



PLANT WILD
Forest Plants
Wild Harvesting
Learning
in Europe



Lifelong Learning Programme

2nd meeting, Braga 14-17th May 2012

Research, technology transfer and training related to Medicinal and Aromatic Plants

wild harvesting in Spain



Eva Moré,
Non-wood Forest Products Department

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Medicinal and aromatic plants wild harvesting in Spain

Research on wild harvesting in Spain



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Medicinal and aromatic plants wild harvesting in Spain

Research (1997-2012)

- **PROJECTS: 3**
 - **Catalonia (1997-1999)**
 - **León, Castilla La Mancha (2008-2011)**
 - **La Rioja (2010-2011)**



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Medicinal and aromatic plants wild harvesting in Spain

Research (1997-2012)

- **STUDIES: 15**
 - **1 Spain**
 - **1 Castilla La Mancha**
 - **13 Catalonia**



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Medicinal and aromatic plants wild harvesting in Spain

Research (1997-2012)

- PROJECTS: 3

- Catalonia (1997-1999)
- León, Castilla La Mancha (2008-2011)
- La Rioja (2010-2011)

- STUDIES: 15

- 1 Spain
- 1 Castilla La Mancha
- 13 Catalonia

- SPECIES: 13

- 10 *Gentiana lutea*
- 6 *Thymus vulgaris*
- 5 *Arnica montana*
- 3 *Arctostaphylos uva-ursi*, *Satureja montana*, *Lavandula angustifolia*
- 2 *Lavandula latifolia*
- 1 *Vaccinium myrtillus*, *Pinus sylvestris*, *Rosmarinus officinalis*, *Santolina chamaecyparissus*, *Salvia lavandulifolia*, *Equisetum arvense*, *Rosa canina*, *Sambucus nigra*



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Medicinal and aromatic plants wild harvesting in Spain

Research

1997-1999 – University of Lleida. To show the compatibility between gathering of natural aromatic and medicinal plants, the conservation of their natural area and the viability of its cultivation in the Pyrenees as an alternative crop. (LIFE97 ENV/E/000260). Financed by Life-Environment.

Student studies of University of Lleida:

- ❖ 1999. Sergi Mulet i Aloras. Effect of the traditional harvesting of roots of *Gentiana lutea* L. in the Pallars Sobirà county.
- ❖ 1999. Pilar Ninot Carbasa. Regeneration capacity of bearberry (*Arctostaphylos uva-ursi* (L.) Spr.) for its harvesting as medicinal plant.
- ❖ 2002. Gemma Arjó i Rella. Harvesting and monitoring of the wild populations of *Gentiana lutea* L. in the Val d'Aran County.
- ❖ 2002. Gemma Altarriba i Garcia. Biology and phenology of *Gentiana lutea* L. in the Cerdanya County.
- ❖ 2000. Montserrat Miró Sanahuja. Effect of the traditional harvesting of *Gentiana lutea* L. in the Cerdanya county.

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Medicinal and aromatic plants wild harvesting in Spain

Research

1998-1999 – University of Lleida. **Study of the regeneration of populations of *Gentiana lutea* and *Gentiana burseri* submitted to exploitation by root extraction and consequences of this activity in the habitat and in the same population in Cerdanya county.**
Financed by ACOM, Government of Catalonia

2004 – Forest Sciences Center of Catalonia (CTFC). **Study of the wild harvesting of medicinal and aromatic plants and proposal of recreational activities for disseminate its traditional uses in the Bon Repòs State.** Financed by Provincial Council of Lleida.
Species: *Thymus vulgaris*, *Satureja montana*.

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Medicinal and aromatic plants wild harvesting in Spain

Research

2005-2009 – Forest Sciences Center of Catalonia (CTFC).
Monitoring of the production study (wild harvesting and cultivation) of medicinal and aromatic plants in Bon Repòs State.
Financed by Provincial Council of Lleida.
• Species: *Satureja montana*, *Thymus vulgaris*, *Lavandula angustifolia*.

2005-2006 – **Study about the wild harvesting of *Gentiana lutea* and other plants of economic interest.** Possibilities of common commercialisation between the municipalities of Cabrillanes, Villablino, Placios de Sil and Murias de Paredes (León). Plan 42, Ministry of Environment of the Junta de Castilla y León , a través del Plan 42.
Species: *Gentiana lutea*, *Vaccinium myrtillus*.

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Medicinal and aromatic plants wild harvesting in Spain

Research

2005 – Forest Sciences Center of Catalonia (CTFC). **Valorisation of non wood forest products. Medicinal and aromatic plants.**

Financed by Department of Environment. Government of Catalonia.

- Species: *Arnica montana*, *Thymus vulgaris*, *Satureja montana*, *Lavandula angustifolia*, *Gentiana lutea*.

2007-2008 – Forest Sciences Center of Catalonia (CTFC).

Promotion of the production, manufacturing and trade of medicinal and aromatic plants. Financed by Department of Agriculture, Food and Rural Development. Government of Catalonia.

- Species: *Thymus vulgaris*, *Gentiana lutea*, *Arnica montana*, *Pinus sylvestris*.

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Medicinal and aromatic plants wild harvesting in Spain

Research

2008 – Forest Sciences Center of Catalonia (CTFC). **Valorisation of medicinal flora in Els Ports Natural Park.** Financed by Provincial Council of Tarragona, Obra Social “La Caixa”.

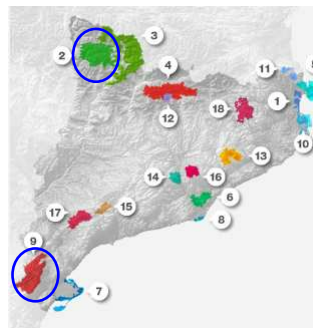
- Species: *Rosmarinus officinalis*, *Thymus vulgaris*, *Lavandula latifolia*, *Santolina chamaecyparissus*, *Salvia officinalis* subsp. *lavandulifolia*. (9)

2009 - Centre de Desenvolupament Rural Integrat de Catalunya (CEDRICAT). **Use without abuse: sustainable use of wild plant resources as a way for its conservation and for the economic development in mountainous areas**, Obra Social Caja Madrid.

- Species: *Arnica montana*. (2)

2. National Park Aigüestortes i Estany de Sant Maurici

9. Natural Park Els Ports



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Medicinal and aromatic plants wild harvesting in Spain

Research

2008-2011. University of León. **Studies of *Gentiana lutea* in the west mountain of León, considering an integrated management. Objective A: Study of the wild plant and its harvesting. Proposals for its exploitation.** Financed by Ministry of Environment of the Junta de Castilla y León.

2010-2011 – **Research and innovation related to medicinal and aromatic plants and berries in the Biosphere Reserve of the valleys of Leza, Jubera, Cidacos y Alhama.** Programme of Action in the Biosphere Reserve of La Rioja. Dirección General de Calidad Ambiental, Government of La Rioja.



Medicinal and aromatic plants wild harvesting in Spain

Research

2010 – Forest Sciences Center of Catalonia (CTFC). **Study of the production, market and strategic analyses of the forest products in Catalonia.** Pilot Project “Forest Taste”. Financed by Department of Agriculture, Food and Rural Development-Government of Catalonia, and Ministry of Environment, Rural and Marine.

- Berries: *Rosa canina*, *Sambucus nigra*
- Medicinal and aromatic plants: *Arnica montana*, *Lavandula sp.*, *Thymus vulgaris*.

2011 - Forest Sciences Center of Catalonia (CTFC). **Technical bases for the regulation of the commercial use of vegetal species in forest environment.** Financed by Government of Catalonia.

- Species: *Gentiana lutea*, *Arctostaphylos uva-ursi*, *Arnica montana*, *Viscum album*, *Erica sp.*, *Pistacia lentiscus*, *Arbutus unedo*, *Viburnum tinus*.



Medicinal and aromatic plants wild harvesting in Spain

Technology transfer on wild harvesting in Spain



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Medicinal and aromatic plants wild harvesting in Spain

Technology transfer (1997-2012)

- PROJECTS: 2
- STUDIES: 7
- TECHNICAL SHEETS: 7
- MAGAZINES: 1
- REFERENCES IN BOOKS: 1
- ARTICLES IN PROCEEDINGS: 2 (English)
- POSTERS IN CONGRESSES: 2 (1 English, 1 Catalan)
- ARTICLES IN JOURNALS: 6 (4 Spanish, 2 English)
- ARTICLES IN MAGAZINES: 15
- INTERNET: 3 websites
- DVD: 1

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Medicinal and aromatic plants wild harvesting in Spain

Technology transfer (1997-2012)

- Species:

- 6 *Gentiana lutea*
- 3 *Arnica montana*
- 2 *Thymus* sp.
- 1 *Vaccinium myrtillus*, *Arctostaphylos uva-ursi*, *Rosa canina*, *Achillea millefolium*, *Ramonda myconi*, *Lavandula* sp.



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Medicinal and aromatic plants wild harvesting in Spain

Technology transfer (1997-2012)



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Medicinal and aromatic plants wild harvesting in Spain

Technology transfer: projects and studies

BLANCO, E.; BREAUX, J. 1997. **Results of the study of commercialisation, exploitation and conservation of medicinal and aromatic plants in Spain.** Financed by: Traffic Europe. February 1997. Unpublished

- LANGE, D. 1998. **Europe's Medicinal and Aromatic Plants: Their use, trade and conservation.** June 1998. 77pp. ISBN 1 85850 144 X (ISBN 978 1 85850 144 4).

This report reviews European trade and documents the results of in-depth studies in eight countries: Albania, Bulgaria, France, Hungary, **Spain**, Turkey and the UK. It identifies 150 species that could be at risk in one of several countries from over-collection in the wild.

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Medicinal and aromatic plants wild harvesting in Spain

Technology transfer: projects and studies

1997-1999 – University of Lleida. **To show the compatibility between gathering of natural aromatic and medicinal plants, the conservation of their natural area and the viability of its cultivation in the Pyrenees as an alternative crop. (LIFE97 ENV/E/000260).** Financed by Life-Environment.

2002 – Forest Sciences Center of Catalonia (CTFC). **Viability study of the harvesting, manufacturing and trade of non wood forest products in the municipality of Josa and Tuixent (Lleida).** Financed by the County council of Alt Urgell.

2004. Unit of Promotion and Forest and Rural Development of Catalonia. **Current situation and development strategies for the production of medicinal, aromatic and seasoning plants in Catalonia.** Financed by Government of Catalonia.

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Medicinal and aromatic plants wild harvesting in Spain

Technology transfer: projects and studies

2004-2006 - GEIE FORESPIR, Forest Sciences Center of Catalonia (CTFC), Office National des Forêts (ONF), Centre Régional de la Propriété Forestière de Midi-Pyrénées (CRPF). **SILVAPYR 2006 – Action S6: Improvement of the economic valorisation of non wood forest products.** Financed by INTERREG IIIA France-Espagne, Government of Catalonia, DATAR Pyrénées, Conseil Régional Midi-Pyrénées, Région Aquitaine. **Catalan, Spanish, French**

Studies:

- ❖ MELERO, R. 2004. Current situation of MAPs wild harvesting in Catalonia.
- ❖ MORÉ, E. 2004. Market research of MAPs in Catalonia

- Technical guides: Wild Herbs, root of *Gentiana lutea*, flower of *Arnica montana*, fruit of *Vaccinium myrtillus*, legislation

<http://www.ctfc.es/silvapyrs6/webcat/pampf.htm>

www.ctfc.cat



Medicinal and aromatic plants wild harvesting in Spain

Technology transfer: projects and studies



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Medicinal and aromatic plants wild harvesting in Spain

Technology transfer: projects and studies

BLANCO, E. 2006. **Manual for the use of wild plant resources of the mountain in Castilla y Leon (Spain)**. Study not published (Spanish).

2007. **Special bulletin of wild harvesting of aromatic and medicinal plants**. Editor Forest Sciences Center of Catalonia (CTFC). Financed by Fundació Biodiversidad (SMEs awareness on issues related to the environment). Catalan / Spanish

<http://pam.ctfc.es/butlleti/>



www.ctfc.cat

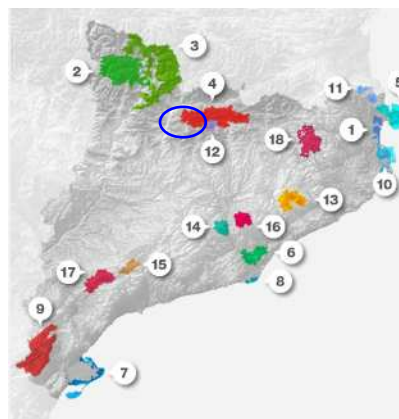


Medicinal and aromatic plants wild harvesting in Spain

Technology transfer: projects and studies

2009 – Forest Sciences Center of Catalonia (CTFC). **Study of the production viability of local species in the Alt Urgell county with industrial applications in the medicinal and aromatic sector**. Financed by the Alt Urgell County Council and the Institute for the Development and Promotion of High Pyrenees and Aran (IDAPA)

- Proposal for the Valley of La Vansa-Tuixent to harvest wild medicinal flora for providing minor species to the market.



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Medicinal and aromatic plants wild harvesting in Spain

Technology transfer: projects and studies

2009 - Centre de Desenvolupament Rural
Integrat de Catalunya (CEDRICAT).
**Sustainable production of arnica flower in
the Pyrenees.** Obra Social Caja Madrid.
Spanish

- Species: *Arnica montana*.



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Medicinal and aromatic plants wild harvesting in Spain

Technology transfer: projects and studies

MORÉ,E.; MELERO,R. 2009.
**Sustainable wild harvesting of
medicinal and aromatic plants.** Project
INTRADER – Innovation and Tranfer for
the Rural Development. Technical guides
for SMEs assessment. Editor Forest
Sciences Center of Catalonia. Financed
by Fundación Biodiversidad. Spanish



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Medicinal and aromatic plants wild harvesting in Spain

Technology transfer: posters in congresses

- MELERO, R.; CRISTOBAL, R. 2006. **Sprout of *Gentiana lutea* L harvested with a sustainable technique in north Spain – First results.** 1st IFOAM International Conference on Organic Wild Production. Teslic, Bosnia and Herzegovina, 3-4 May 2006. **English**
- MELERO, R.; CRISTOBAL, R. 2007. **Effect of a technique of sustainable wild harvesting in the regeneration of populations of *Gentiana lutea* L. in the Catalan Pyrenees.** V Congress of the Catalan Institute of Agrarian Studies (ICEA). Castelldefels (Spain), 4-6 de juliol de 2007. **Catalan**

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Medicinal and aromatic plants wild harvesting in Spain

Technology transfer: articles in proceedings

- BLANCO, E.; MORALES, R.; PELLIN, P.P. 1998. **Harvesting and trade of *Thymus* in Spain.** Proceedings of the First International Symposium on the conservation of medicinal plants in trade in Europe. Medicinal plant trade in Europe: Conservation and Supply. Royal Botanic Gardens, Kew (UK), 22-23 June 1998.
- CRISTÓBAL, R.; VAN GINKEL, A.; VARELA, F. 2004. **Current status of medicinal and aromatic plants in Spain.** Report of a Working Group on Medicinal and Aromatic Plants, ECP/GR IPGRI First meeting, Gozd Martuljek (Slovenia), 12-14 September 2012.

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Medicinal and aromatic plants wild harvesting in Spain

Technology transfer: references in books

- MELISSA, S.A. 1999. **The extract plants. Bases for a sector development planning.** Ed. Fundación Alfonso Martín Escudero. Madrid. **Spanish**
- Legislation on wild harvesting activities.
- Wild sources of plant material in Spain.

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Medicinal and aromatic plants wild harvesting in Spain

Technology transfer: articles in journals

- PELLÍN, P.P. 1996. **The distillers in the Kingdom of Granada: stills and traditional alchemy.** Fundamentos de antropología, nº 4 y 5, pp. 135-67. C.I.E. Angel Ganivet-Excma. Provincial Council of Granada. **Spanish**
- PALACIO, L. 2000. **The medicinal and aromatic plants. An alternative future for the rural development.** Boletín Económico ICE num. 2652, 1st-14th May 2000. **Spanish**
- MELERO, R.; CRISTOBAL, R. 2006. **Sustainable wild production of yellow gentian in the Catalan Pyrenees (NE Spain).** Ecology and Farming (the magazine of the International Federation of Organic Agriculture Movements) núm. 40: 56-57. **(article). English**

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Medicinal and aromatic plants wild harvesting in Spain

Technology transfer: articles in journals

- FERNÁNDEZ, A. 2006. **The medicinal and aromatic plants, a potential with a a great need of reorientation.** Estudios Agrosociales y Pesqueros, num. 209: 177-214. **Spanish.**
- RECASENS, J.; NINOT, J.; CRISTOBAL, R.; AYMERICH, P. 2008. **Sustainable wild harvesting of *Arctostaphylos uva-ursi* in the Pyrenees as a conservation practice.** Journal of Herbs, spices and Medicinal Plants, 14 (1,2): 1-12. **English**
- de la TORRE, R.; LÓPEZ, J. 2010. **The medicinal and aromatic plants . Future and potentialities in Extremadura.** Report La Agricultura y la Ganadería Extremeñas en 2010. **Spanish.**

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Medicinal and aromatic plants wild harvesting in Spain

Technology transfer: articles in magazines

- **Medicinal and aromatic plants wild harvesting studies and cultivation implantation in the Pyrenees.** Butlletí ACPPAM num. 6, winter 2004. **Catalan.**
- LOPE, J.J. 2008. **The production of *Lavandula* essential oil in the Iberian Peninsula. Real alternative or simple complement to partial time agriculture?** Butlletí ACPPAM num. 12, autumn 2008. pp. 6-8. **Spanish.**
- MELERO, R. 2008. **Healing flora valorisation in the “Els Ports” Natural Park.** Butlletí ACPPAM num. 12, autumn 2008. pp. 6-8. **Catalan.**

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Medicinal and aromatic plants wild harvesting in Spain

Technology transfer: articles in magazines

2007. **Special bulletin of wild harvesting of aromatic and medicinal plants.** Editor Forest Sciences Center of Catalonia (CTFC). **Catalan / Spanish**

- MORE, E. The importance of wild harvesting in Europe. The current situation of the wild harvesting of medicinal and aromatic plants.
- MORE, E. The wild harvesting in Spain is concentrated in the south-east. The case of thymes. The current situation of the wild harvesting of medicinal and aromatic plants.
- FANLO, M. The activity in Catalonia. The current situation of the wild harvesting of medicinal and aromatic plants.
- MORE, E. Interviews to harvesters in Spain.
- MELERO, R. Legislation that could affect the wild harvesting of medicinal and aromatic plants in Spain.
- CRISTOBAL, R.; MELERO, R. Research on wild harvesting of medicinal and aromatic plants in Catalonia. What's on research?

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Medicinal and aromatic plants wild harvesting in Spain

Technology transfer: articles in magazines

2007. **Special bulletin of wild harvesting of aromatic and medicinal plants.** Editor Forest Sciences Center of Catalonia (CTFC). **Catalan / Spanish**

- APROGEN. The project Gentian in the mountains of León. What's on research?
- BLANCO, E. Possibilities of exploitation in Castilla y León. What's on research?
- ROMERO, R. Ecological, molecular and medicinal compounds yield characterisation of *Arnica montana* in Galicia. Potencial valorisation as an alternative cultivation.
- MELERO, R. Guide of good harvesting techniques of MAPs. The sheet.
- CRISTÓBAL, R. Elaboration process of an International Standard for the sustainable wild harvesting of medicinal and aromatic plants (ISSC-MAP).
- PELLIN, P.P. The essences of the mountain, a rural alchemy.

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Medicinal and aromatic plants wild harvesting in Spain

Technology transfer: internet


2009 -2011. **HERBAM.NET:**
Mediterranean Memory of Herbes utilisation. Spanish / Catalan

Information on:

- Harvesting calendar.
- Harvesting alerts.
- Harvesting info.
- Plants sheets (toxic an protection info).

<http://www.herbam.net>



Nom científic :	Ilex aquifolium L.
Nom Català :	Grèvol
Nom espanyol :	Acebo
Color de la flor :	
Color del fruit :	
Tipus de vegetal :	arbrut perenne
Zones de vegetació :	Muntanya mediterrània de coníferes
Hàbitat :	Muntanya mitjana plujosa
Parts de la planta emprades :	bosc landes Fulla

Les fulles i els fruits són tòxics, especialment aquests darrers

Espècie protegida segons l'Ordre de 5 de novembre de 1984 sobre protecció de plantes de flora amenaçada a Catalunya.

Espècie vulnerable segons el Decret 104/1994, de 10 maig, pel qual s'estableix el Catàleg Andalús d'Espècies de la Flora Silvestre Amenada i la Llei 9/2003, de 28 de octubre, de la flora i la fauna silvestres.

Espècie vigilada (sols poblacions naturals) segons el Decret 70/2009, de 22 de maig, del Consell, pel qual es crea i regula el Catàleg Valencià d'Espècies de Flora Amenades i es regulen mesures addicionals de conservació.

Espècie d'especial protecció segons el Decret 75/2005, de 8 de juliol, pel qual es crea el Catàleg Balear d'Espècies amenaçades i d'Espècies de Flora Amenades, les Àrees Biològiques Críiques i el Consell Assessor de Fauna i Flora de les Illes Balears

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Medicinal and aromatic plants wild harvesting in Spain

Technology transfer: internet

Informative blog on medicinal and aromatic plants. Catalan
APSB-CTFC

<http://infopam.wordpress.com>

Wild harvesting posts:

- 4th May 2012. Seminar: wild harvesting of medicinal plants in Andorra (Teruel)
 - 28th November 2011. Video: memory of the turpentine harvesters in Tuixent-la Vansa.
 - 27th June 2011. Seminar: Demonstration of wild harvesting of thyme in France.
 - 2nd November 2010. Interview: harvester of medicinal plants for homeopathic laboratories
- 68 posts tagged "harvesting"
- Mainly courses of: MAPs botanical recognition and harvesting walking for products elaboration.

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Medicinal and aromatic plants wild harvesting in Spain

Technology transfer: internet

Harvesting of medicinal plants from de wild and cultivation.

Spanish

<http://www.ecoaldea.com/plmd/recoleccion.htm>

- Harvesting according to part of the plant.
- How to dry.
- How to preserve.
- Harvesting calendar.

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Medicinal and aromatic plants wild harvesting in Spain

Technology transfer: others

2005 - DVD: **Production of medicinal and aromatic plants.**

CTFC and Unit of audiovisual production, Center for agrorural studies and training, Department of Agriculture, Government of Catalonia.

Catalan, Spanish, English, French



- Interview to a gentian harvester and a medicinal plants harvester in the Pyrenees in Catalonia.
- Species: *Gentiana lutea*, *Rosa canina*, *Achillea millefolium*, *Ramonda myconi*

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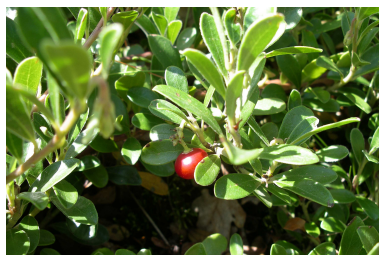
Training on wild harvesting in Spain



Training (1997-2012)

- SEMINARS: 5 (4 Catalonia, 1 Castilla y León)
- LECTURES IN SEMINARS: 19
- LECTURES IN COURSES: 4 (3 Catalonia, 1 Aragón)
- A lot of COURSES for MAPs botanical recognition and harvesting walking for products elaboration

- Species:
 - 4 *Gentiana lutea*,
 - 2 *Arctostaphylos uva-ursi*
 - 1 *Colchicum autumnale*, *Thymus* sp.





Medicinal and aromatic plants wild harvesting in Spain

Training: Seminars

2000 – **Conservation and exploitation of wild species of medicinal use.** Organised by CTFC. Solsona (Lleida), 7th April 1999.

Catalan

- CODINA, C. Approximation to the study of *Colchicum autumnale* as a possible alternative cultivation in depressed agricultural areas.
- AYMERICH, P. Study of the natural regeneration models of the bearberry (*Arctostaphylos uva-ursi*).
- PERY, M. Programmes of the Department of Environment, Government of Catalonia, for the flora conservation.
- AIELLO, N. Cultivation essays of gentian (*Gentiana lutea* L.) in Italy. French
- MULET, S. Study of the regeneration and multiplication models of gentian (*Gentiana lutea* L.)

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Medicinal and aromatic plants wild harvesting in Spain

Training: Seminars

2003 – **Sustainable harvesting and conservation of wild medicinal and aromatic species.** Summer course of University of Lleida. La Seu d'Urgell, 15-25th July 2003. Catalan

- AGELET, A. The use of healing flora in the folk culture of Catalonia.
- MORÉ, E. Current international market of medicinal and aromatic plants.
- BLANCO, E. Environmental and economic impact of the use of aromatic and medicinal plants in Spain. Spanish
- CONESA, J.A. Interesting populations of medicinal and aromatic plants for the industry. Distribution and ecology.
- CONESA, J.A. Legal frame for the wild harvesting activity in Catalonia and Spain.
- QUERALT, J. Wild harvesting of *Gentiana lutea* L.

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Medicinal and aromatic plants wild harvesting in Spain

Training: Seminars

2003 – **Sustainable harvesting and conservation of wild medicinal and aromatic species.** Summer course of University of Lleida. La Seu d'Urgell, 15-25th July 2003.

- BLANCO, E. Wild harvesting of *Thymus* sp. in Spain. **Spanish**
- RECASENS, J. Wild harvesting of *Arctostaphylos uva-ursi* L. in the Catalan Pyrenees.
- FANLO, M. Possibility of wild harvesting of healing flora in the valley of La Vansa-Tuixent and its trade.
- CRISTOBAL, R. Good harvesting techniques guide for medicinal and aromatic plants.
- SCHIPPMAN, U. Impact of cultivation and collection on the conservation of medicinal plants: global trends and issues. **English**

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Medicinal and aromatic plants wild harvesting in Spain

Training: Seminars

2004 – **Advanced Seminar on: Non-wood forest products management and use in the Mediterranean region.** Organised by: CTFC. Financed by: Spanish Agency for International Co-operation, Ministry of Foreign Affairs; Catalan Agency for Development Co-operation, Government of Catalonia. Azahar Programme. Solsona, 20th September-1st October 2004. **Catalan, Spanish, English, French**

NWFPs: MAPs, mushrooms and truffles, fruit, cork, honey and resins.

- **Current situation** regarding production of goods and services and sustainable forest management in the Mediterranean region
- Use, transformation and **commercialisation**.
- **Sustainability** of NWFP use in the Mediterranean region
- Relation between the use of the Mediterranean forest as a NWFP producer and **other uses**, such as tourism, grazing or wood production
- Integration and enhancement of NWFP production in national and international **policies** concerning forest and rural development and natural environment management

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Medicinal and aromatic plants wild harvesting in Spain

Training: lectures on seminars

2004 – **Advanced Seminar on: Non-wood forest products management and use in the Mediterranean region.** Solsona, 20th September-1st October 2004.

- CRISTOBAL, R. Current situation of exploitation of MAP's. From wild harvesting to cultivation.

2008 – **Seminar about Medicinal and Aromatic Plants Harvesting: the gentian and commercial blueberry.** Asociación Promotora de la Genciana y otras plantas de interés económico (APROGEN). Villablino (León), 12-14th February de 2008. **Spanish**

- MELERO, R. The gentian in Catalonia: legal state, exploitation and uses.

2008 - **I Catalan Seminar of Flora Conservation.** Blanes (Girona), 2nd and 3rd June 2008. **Catalan**

- MELERO, R. Sustainable harvesting of medicinal and aromatic plants as a conservation measure.

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Medicinal and aromatic plants wild harvesting in Spain

Training: lectures in courses

CRISTOBAL, R.; FANLO, M. **Exploitation of non wood forest products.** IEI Reus. November 2001. **Catalan**

MORE, E. **Associations related to the use and marketing of NWFP: medicinal and aromatic plants.** Course on management and exploitation of non wood forest products. Forest Engineering, University of Lleida. Lleida, 24th January, 2005. **Catalan.**

CRISTÓBAL, R. **Sustainable harvesting of Medicinal and Aromatic Plants.** Invited lecture in the class subject "Sustainable exploitation of the forest". School of gardening Rubió i Tudorí. Barcelona, 26th March 2007. **Catalan**

MORÉ, E. **Introduction to the natural environment. Sustainable harvesting of wild medicinal and aromatic plants.** Environmental guides course. Solsona, 23th April 2012. **Catalan**

SAZ, P. 2012. **Harvesting and preservation of plants.** Graduate Course of Naturist Medicine, University of Zaragoza. **Spanish**

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Research, Technology transfer and Training

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none">- Research on commercial medicinal plants (<i>Gentiana lutea</i>, <i>Arnica montana</i>, <i>Arctostaphylos uva-ursi</i>).- High interest in Catalonia and León.	<ul style="list-style-type: none">- More importance of the cultivation.- Few training on wild harvesting techniques.- No economic studies on harvesting activity (only conservation ones)
OPPORTUNITIES	THREATS
<ul style="list-style-type: none">- Training to domestic harvesters on sustainable techniques.- Rural development projects (mainly in mountains).	<ul style="list-style-type: none">- Decreasing of wild harvesting knowledge (botanical, habitat)- Few revenue.

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Thank you for your attention

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