

Medicinal and aromatic plants (MAP) are a tradition in Morocco. The country is one of the main producers of essential oils and aromatic and medicinal plants since very old days. In addition, Morocco is also among the richest Mediterranean countries in terms of biodiversity due to its geographical position offering a large range of Mediterranean bioclimatic conditions. The diversified eco-geographical conditions favored the development of a very rich and diversified flora with pronounced endemism. More than 400 medicinal and aromatic species are encountered in the country, with no less than 20% as endemic.

The MAP sector is promising for crop diversification at the national level, but also for adding value to fragile land in the marginal zones. Therefore, it can offer a viable source of income to the local population. However, current situation is dominated by overexploitation of wild resources, lack of adequate transformation equipment and archaic processing methods, leading to low added value depreciation of marketed local products.

The workshop is organised in the context of the project "Biological Diversity, Cultural and Economic Value of Medicinal, Herbal and Aromatic Plants in Morocco", funded by USDA-ARS. The objective of the workshop is to :

- i) Highlight the recent research results on MAP biodiversity status and advances on crop management research technologies and
- ii) Debate on how the conducted research would contribute to the socio-economic development and the safeguarding and sustainable use of the MAP genetic resources.

### Organising Committee

**President :** Pr. Hamid Narjisse, Director of INRA

**Coordinators:** Al Faïz C., Lhaloui S., Thami Alami I. and El Gharous M

**Members :** M. El Mourid, I. Shaqir, M. Lage., H. Hilali, N. Saïdi, R. Moutiq, M. Boutfirass, H. Ouabbou, E. El Mzouri and B. El Yousfi.

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**Institut National de la Recherche Agronomique**

**Organises an**

**International workshop  
on**

**Research for development,  
sustainable use and adding  
value of aromatic and  
medicinal plants**



*Chefchaouen 7-8 November 2007*

# Programme

7 November, 2007

8.00-9.00 am : Registration

9.00-9.30 am : Official opening of the workshop by :

- The Governor of Chefchaouen province
- The Director of INRA
- The Agricultural Attaché, US embassy

9.30 -10.00 am : Coffee break

## Session 1 : Essential oils, Commercial stakes

Chairman : Pr. Hamid Narjisse

Rapporteur : Mohamed El Gharous

10.00 -10.20 am : Status of Global Essential Oil and Aromatic Plant Industry with Reference to Morocco (Ramu Govindasamy, Venkata S. Puduri and Jim Simon, Department of Agricultural, Food and Resource Economics, Rutgers University, New Jersey, USA)

10.20-10.40 am : Characterisation of MAP of the Mediterranean region through their essential oil composition, resins and extracts. (J. Casanova, Université de Corse-CNRS, France)

10.40 -11.00 am : Quality and standards of the essential oil. (S. Zrira, IAV Hassan II, Morocco)

11.00 -11.20 am : Characterization of some Moroccan MAP and their essential oils according to the anti fungal and bacterial effect. (Aafi A. *et al.* Centre de Recherche Forestière, Rabat, Morocco).

11.20-12.20 am : Discussion

12.30-2.30 pm : Lunch

## Session 2 : Genetic resources

Chairman : Akka Oulahboub

Rapporteur : Nezha Saïdi

2.30-2.50 pm : MAP Genetic resources in Morocco : status and safeguarding through domestication and *in-situ* and *ex-situ* conservation (Al Faiz C., I. Thami Alami, H. Ouabbou and N. Saïdi. INRA, Morocco)

2.50-3.10 pm : How to make MAP wild collection sustainable: ISSC-MAP and FairWild. (K. Wolfgang. IMO, WWF and IUCN)

3.10-3.30 pm : Conservation of Genetic Resources of Saffron: a Sustainable Crop with Potential Medicinal Applications (José-Antonio Fernández, Instituto de Desarrollo Regional.Universidad de Castilla-La Mancha, SPAIN)

3.30-3.50 pm : Strategies of US National Plant Germplasm System to collect, maintain, evaluate, distribute and preserve herbal, aromatic and medicinal plants. (E.N. Garvey; National Germplasm Resources Lab, Beltsville ARS-USDA, USA)

3.50-4.30 Discussion

4.30-5.00 Coffee break – Poster exhibition

## Session 3 : Domestication and biological activities

Chairman : Shaqir Ibrahim.

Rapporteur : El Yousfi Brahim.

5.00-5.20 pm : Domestication and cloning of the aromatic and medicinal plants (A. Lamarti, Faculté des Sciences. Tétouan, Morocco)

5.20-5.40 pm : Importance of Sample Preparation on the Assay of Bioactive Phytochemicals form Foods, Herb and Dietary Supplement (Devanand L. Luthria, Beltsville Human Nutrition Research Center, ARS, USDA, Beltsville, USA.)

5.40-6.00 pm : Research strategy of new pharmacologically active molecules from plants for the treatment of pathologies. (B. Lyoussi, Faculté des Sciences de Fès. Morocco)

6.00-6.20 pm : Medicinal and aromatic plants : a source of molecules with high economical value. (H. Greche, INPAM, Morocco)

6.20-7.00 pm : Discussion

**8 November, 2007**

## Session 4 : Culture, plant breeding and adding value

Chairman : Mohamed El Mourid

Rapporteur : El Houcine El Mzouri

8.30-8.50 am : Crop management of some cultivated MAP in Morocco (M. Boutfirass and El yousfi B. INRA, Morocco)

8.50-9.10 am : Assessment of biotic stress agents associated to cultivated MAP in Morocco (S. Lhaloui & El Yousfi)

9.10-9.30 am : Research In Switzerland: Breeding and Optimising the Cultivation Procedures of Medicinal Plants to Improve their Benefits. (Baroffio C. and C. Carlen, Station de recherche Agroscope Changins-Wädenswil ACW, Switzerland)

9.30-9.50 am : Possibilities of improvement and extension of Saffron crop in Morocco (M. Lage)

9.50-10.30 am : Discussion

10.30-11.00 am : Coffee break – Poster exhibition

## Session 5: Development, case studies

Chairman : Imane Thami Alami

Rapporteur : Hamida Hilali

11.00-11.15 : Les Aromes du Maroc (Latrache B., Les Domaines Agricoles. Morocco)

11.15-11.30 : MAP cultivation in Oulmès region : constraints and potential (E. Aouragh)

11.30-11.45 : Coopérative féminine d'exploitation des PAM de Dar Chaoui (B. Zillal, M. Bouânani)

11.45-12.00 : SOMAPAM, a citizen society for the development of MAP filière in Morocco (M. Ismaili Alaoui. IAV Hassan II, Rabat-Morocco)

12.00 -12.30 : Discussion– Poster exhibition

12.30 – 2.00 pm : Lunch

## Round tables (2.00-4.00 pm)

1. Sustainable use of MAP Genetic resources  
Facilitator : Al Faiz C. / Rapporteur : Ouabbou H.

2. Intensive and organic culture of MAP  
Facilitator : Lhaloui S. / Rapporteur : Lage M.

3. Quality and MAP markets  
Facilitator : Ismaili Alaoui / Rapporteur : Moutiq R.

4.00-4.30 : Recommendations lecture and closing of the workshop

**9 Novembre, 2007**

Field trip (optional)