

3rd SYMPOSIUM ON HYPOGEOUS FUNGI OF THE MEDITERRANEAN BASIN (HYPOGEOUS 3) under the theme "truffles and desert truffles in the face of climate change"

PRESENTATION

Held every 10 years, the Hypogeous Mushrooms of Mediterranean Basin Symposium (HYPOGES) provides an opportunity to present new information and research advances in the field of Hypogeous Mushrooms (HM).

HYPOGES is a major event in the fields of research, culture, and management of Hypogeous Fungi (HF). The importance and value of this resource is increasingly recognized worldwide. The mushrooms involved in this symposium include truffles, desert truffles (*Terfezia* and *Tirmania*) and many other species that have international scientific importance. They also have great culinary, economic and commercial interests.

During 1960s, the knowledge about HM was always presented in Malençon's publications. However, the first publication on the HF in North Africa - I - Ascomycetes was published by Malençon in 1973 and on the Basidiomycetes of northern Africa in 1975. Then came numerous researches, notably on desert truffles, some of which were the subject of theses and/or scientific publications.

In 2004, the first symposium on HF of the Mediterranean basin (HYPOGES1) was organized by the Mohammed V University - Faculty of Sciences of Rabat (from 7th April to 14th April 2004). The symposium presented new data and advances in research on HF in the Mediterranean basin. At that time, it was the largest symposium with more than 60 participants from Italy, France, Spagne, Greece, Turquie, Syrie, Algeria, Tunisia, Botswana, Morocco.... The importance of the HF management in the Mediterranean basin and their role in rural development was emphasized during the symposium. In addition, the delegates presented papers on a wide range of topics including morphology, ecology, physiology and culture of HM.

Post-conference excursions to the Middle Atlas Mountains and the Mamora forest demonstrated the growing economic and cultural importance of HM in Morocco. The one in the Mamora forest made it possible to make participants aware of the local potentialities at the level of the terfess.

The second symposium on HF of the Mediterranean basin (HYPOGES2) was organized in the Faculty of Sciences of Rabat - Mohammed V University, Rabat-Morocco, by the team "Forestry Mycology and Trufficulture" "MycoTruf" from 9 to 14 April 2014. The event was coupled with another congress in its fifth edition entitled "5th *Tuber aestivum/uncinatum* European Scientific Group " "TAUESG 5 " targeting mainly the Burgundy truffle (*Tuber aestivum / uncinatum*).

This combination has proven to be an important event in the field of research, cultivation and management of HF. The importance and value of these mushrooms are increasingly recognized worldwide.

Post-congress excursions to the Middle Atlas and the Mamora forest have led to the discovery of new and previously undetermined species of local black truffles, some of which were briefly reported by Malençon in 1973.

As a producer of HM, including truffles, Morocco is a perfect host for the Third Session of HYPOGES, the only event to be held in an African country. Especially that Morocco, like other countries, continue to encounter certain problems such as production declining, absence of regularization and/or over-exploitation, environmental conditions and a lack of data regarding the biology, cultivation, conservation and management of HM.

HM are underground fungi, mostly edible. During their existence, they develop symbiotic associations, with reciprocal benefits (called mycorrhizal associations) with the roots of higher plants: trees, shrubs (*Cistus*) or herbaceous plants (*Helianthemum*). They draw carbohydrates from these plant organisms and release mineral salts and water by dismantling the mother rock. In exchange, the mycelium by its finesse can explore very large volumes of soil and by mobilizing the mineral elements present, it can restore part of them to the roots of the associated trees. Various other substances can also be transferred. They have the characteristic of being very sensitive to any change, even minimal, of the natural ecosystem in which they are inserted. Its production depend highly on the ecosystem. Their habitats in the Mediterranean basin are concentrated in Mediterranean oak forests, less hot and more humid or in the clearings and desert areas with semi-arid climate, or arid climate (hot and dry). The most important HF are truffles and Terfess (*Terfezia* and *Tirmania*).

HF have two major interests:

- Environmental: by their involvement in symbiotic relationships with host plants, they allow a good development of these organisms and play a very important role in soils stabilization, which consequently minimize desertification.
- Socio-economic: given the economic and commercial interest for most of the HF, through their production of edible fruiting bodies (ascocarps or carpophores), they play a very important role in the improvement and rural development in the region.

OBJECTIVES OF HYPOGEOUS 3 :

- To bring together and promote the relationships between all researchers and socio-economic partners concerned with the study and development of HF of the Mediterranean Basin.
- To initiate a reflection on a sustainable regional development with collaboration of various partners and to establish a permanent network pursuing this reflection.

- To ensure the exchange of ideas and the optimization of scientific and technical progress in this field in order to reinforce North-South and South-North relations.
- To promote the meetings of scientific skills between national and international researchers working in this speciality.
- To promote the advancement and dissemination of knowledge on HF.
- To allow researchers to expose, discuss and highlight their works.
- If a lot of knowledge has been disclosed on the use of Tuber in the kitchen, the writings are much more limited on that of terfess. The symposium could help to develop the lack of information on the cuisine of sand truffles. Great cooks will be needed to promote this little-known product for many gourmets.
- The Tubers are very important in the field of ecotourism. Truffle discovery weekends are frequently offered in France. This is not the case with the discovery of terfess. An exchange between those who practice ecotourism around truffles and those who wish to promote terfess is necessary.
- When we think of truffles, we immediately think of gastronomy. Formerly tuber and terfess were used in medicine. Where is the current research?

The symposium (HYPOGES 3) will therefore provide an opportunity to review the advances in research on biology, physiology, taxonomy and ecology of HF as well as their conservation in their natural environment, their use in commerce and industry, and their involvement in rural development, preservation of ecosystems and fight against desertification.

TOPICS :

I- Biodiversity

- 1) Identifications (morphological and genetic...)
- 2) Ecology
- 3) Ethno-mycology
- 4) Pedology
- 5) ..

II- Cultivation and domestication

III- Culinary art, medicinal and flavors

- 1) Transformation
- 2) Preservation and cooking
- 3) Canning
- 4) ..

IV- Legislation