

Demonstration of truffle hunting with a pig.



generation of inoculation material to inoculate seedlings, presented by Alessandra Zambonelli of the University of Bologna. The customary method is using a suspension of spores to inoculate the seedlings. This method however means that pathogens and other competitor mycorrhiza are also inoculated, which can subsequently develop and impact negatively on truffle production. Inoculating using pure mycelium cultures enables the necessary mating types to be selected. A number of old *truffières* or truffle plantations can be found in the Burgundy region in addition to 200 plantations of 10 to 15 years of age, many of which fail to produce. Inoplant investigated the possible reasons and advised on which measures could be implemented to revitalise production. According to Gollotte Armelle, advisor at Inoplant, many growers thought: plant and be patient. But a plantation needs to be cared for and maintained! Weeding, pruning, working the soil, re-inoculating. The truffle growers from Lalbenque also told me: 'growing truffles is hard work!'

All the researchers and growers are looking for the best irrigation schedules for optimal production. An extensive, five-year project entitled 'CulturTruf' has therefore been started in France whereby 12 experimental sites will be monitored and intensively analysed. CulturTruf is a collaborative initiative of scientists at the INRA and the truffle growers' association (FFT), funded by the French government (France AgriMer).

During IWEMM8 there was an opportunity to visit truffle farmer Roger and his plantation. The plantation was beautifully tended and patrolled by eight guard dogs. We were treated to a demonstration of truffle hunting with a pig! Nowadays, specially trained truffle dogs are generally used, but to ensure the survival of the old traditions, pigs are still also used to sniff out truffles.

Organisation of the sector

Truffle production generates an annual turnover of round 300 million euros in Europe, including upstream and downstream income. The Groupe Européen Truffes et Trufficulture (GETT) was founded in 1999, an organisation for truffle growers' associations from seven countries: Spain, France, Italy, Hungary, Germany, Sweden and Switzerland. The chairman of GETT, Jean Charles Savignac, emphasised that there is a shortage of truffles on the

market and urged the truffle growers and researchers to have faith in the future!

Johann Bruhn gave a perspective on developments in North America on behalf of the North American Truffle Growers' Association.

The Australian truffle sector is just 20 years young, but is extremely well-organised and receives tremendous support from the government. There are more than 200 growers with 120 of them active members of the Australian Truffle Growers' Association. The total yield in 2016 was 12.5 tons and some truffle plantations have exceptionally high production! Truffle growers are often very secretive about their actual yields, but generally in France production of plantations of the black Perigord truffle is between 20 and 90 kilos. Production in Australia reaches 500 kg/ha!

Biodiversity

The huge variety of soil types and biotopes in the Lot encourages a wealth of mushroom varieties and a tradition of mushroom hunting and gathering.

More than 50 different varieties of edible mushrooms are picked for consumption! Picking and trading is tightly regulated in France, but trade on the black market is unavoidable.

Inventories of fungi-flora are being performed in Senegal, Ethiopia and New Caledonia.

Roberto Flores from Guatemala mentioned the discovery of new *Lactarius* species in Guatemala.

It is now crucial to organise nature management so that protecting the biodiversity of fungi is partnered with economic development.

Jesús Pérez-Moreno from Mexico remarked that seeing such a range of biodiversity, and the diversity of cultures present, was what makes the congress such a unique event. Jesús is the organiser of the next event, the IWEMM9 congress in Mexico, and he invited all to attend from 10-14 July 2017 when the promising theme will be 'Mushrooms, humans and nature in a changing world!' ←

Despite regulations, black market truffle trade is unavoidable.
