

The HLP pays a visit to Spain

Spain has much to offer. Anyone who has not visited the country since it joined the EU will be surprised. All the signals indicate that the generous EU funding has been well spent. The infrastructure has been vastly improved, neglected rural areas have become accessible and their economic development encouraged. The agri-sector has made enormous advances - and the mushroom sector as well. The Hessische Landesfachgruppe Pilzbau (HLP) decided that Spain was the ideal destination for their annual excursion from 17-21 April 2005.

Photos: Magda Verfaillie

The members of the HLP are primarily German lignivorous (cultivated on wood substrates) mushroom growers, so they obviously preferred to visit other growers with a common interest. Oyster mushrooms and shii-take were high on the agenda, but the members were also keen to learn from Spanish experiences with growing *Pleurotus eryngii* and *Agrocybe aegerita* (Pioppino mushroom).

Spanish mushroom production centres in two main areas: La Rioja in the

north and Castilla la Mancha in the east. The intention was to visit both regions and conclude the trip with a visit to a shii-take grower, near Barcelona in Catalonia.

La Rioja

Although both growing regions have comparable annual production figures, of roughly 50 000 tons, Spanish spawn production is concentrated in the north. Fungisem is the best known internationally as a spawn producer and distributor, but on a national level

they play an important role as a *Agaricus*, *Pleurotus* and shii-take substrate supplier. This company was an excellent host during our trip through the Rioja region, personified by Jorge Calvo, son of the manager. We didn't get to see the preparation of spawn and sterilised substrate for exotics, but did see the complete production line for oyster mushroom substrate, and the huge complex of nearly 100 poly growing tunnels, good for annual production of 1 million kilos of marketable oyster mushrooms. We also visited neighbouring cooperative Agruset, where substrate blocks are produced for oyster mushrooms for general sales purposes, and a limited amount of shii-take substrate for its own members.

Substrate

Nearly all the Spanish substrate for oyster mushrooms is produced using bulk pasteurisation in containers, the most widely used system in the European Union. Chopped wheat and maize straw is used here, moistened and pre-fermented. After pasteurisation certain companies after-ferment or condition the substrate, and a nitrogen-rich supplement is added before it is pressed into blocks.

With mechanized inoculation and pressing, precautionary measures such as sealed rooms and sterile over pressure air are not used. Problems with contamination hardly ever occur however. Yields are generally high: Fungisem mentions an average yield of 17 % (fresh weight/fresh weight) in one flush, enough to be able to dispose of the substrate afterwards. In the Spanish summer heat with outside temperatures reaching 40 degrees Celsius this is the best way to prevent infections and plagues. Most Spanish growers take a summer siesta lasting a number of weeks, but Fungisem uses climatized growing rooms so is an exception in this case.

With shii-take, two different systems are used, which we could compare at the Ramón farm. Agruset for example, primarily an oyster mushroom substrate producer, also produces limited quantities of shii-take substrate in a similar way to that described above. As a large risk of infection is inherent with this system, large intervals are observed, more precautionary measures are observed, no supplement applied and inoculation is more intensive. Similar substrates realise a yield of 15 %, spread over a few months. The more expensive, sterili-

sed Fungisem substrates based on oak chippings, bran and grains give better results. But to get a double yield, soaking is essential - a process that involves higher labour costs. Ramón has experience with both methods and prefers the second type as mushrooms with a bio-guarantee can be grown.

Castilla la Mancha

In Spain the majority of mushroom growers are organised in agricultural cooperatives, and Castilla la Mancha is no different. Champinter is the largest and most innovative in the region. As an umbrella organisation they produce substrates, firstly for their own members. Read the interview with technical director of Champinter, José Carlos Anguix, on page 20.

The visitors couldn't get enough of the *Pleurotus eryngii*, grown here in a very traditional manner in a kind of bed. The adjacent sterile substrates are covered by a few centimetres of casing soil, and excellent ventilation ensures these mushrooms resemble their natural, wild brothers. This is the condition on which Spanish consumers are prepared to pay serious prices. They are not impressed by the small-cap and thick-stemmed 'monstrosities' that we consume in the



Carlos Díaz Tarrago shows how Microsacs are filled with substrate.



At Fungisem: *Agrocybe aegerita* on pasteurised straw.

north! There's no accounting for taste...

Catalonia

The final stop was at Bolets cultivats Tarrago, in a traditional hacienda near Barcelona. Carlos Tarrago is a bio-engineer, an eccentric character who chose shii-take cultivation above a promising career in the agrochemical industry. In a limited space he sticks to his own way of growing shii-take. By controlling each stage of the process, from selecting the raw materials to the actual marketing of the final produce, he can offer a premium quality mushrooms, that the demanding Barcelona consumers are willing to pay a good price for. He uses pure chestnut shavings, enriched with bran and maize meal. By lengthy maturing of the sterilised substrates in perforated Microsacs, two flushes can be harvested at the end of the process in the space of three weeks. This method means there are virtually no problems with plagues and infections. With an annual sales volume of around 20 tons, Carlos Tarrago can enjoy a healthy profit from his one-man business. A real achievement.



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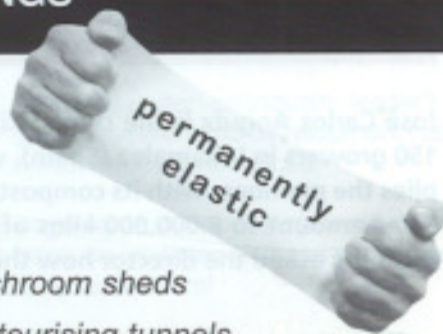
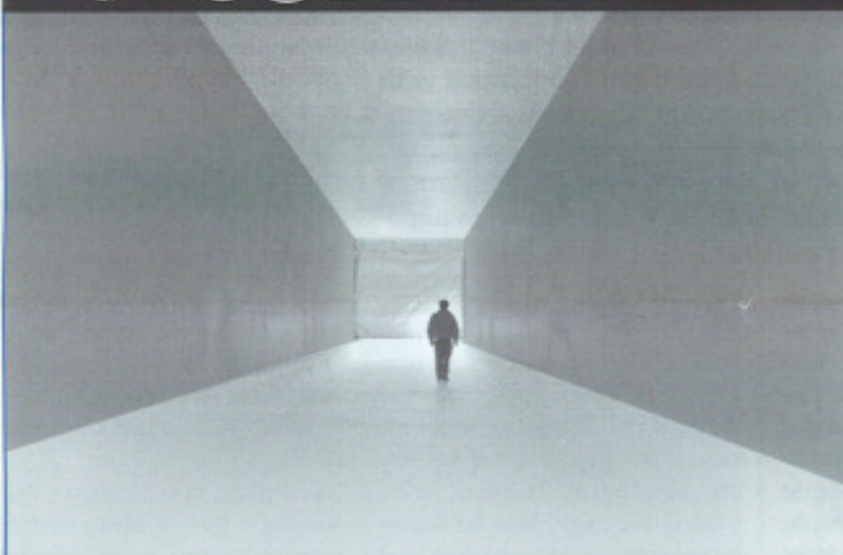
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