

Mushroom growing in Romania



Mushrooms growing in bags on the ground.

A delegation from Mycelia visited Romania to prepare a professional spawn laboratory and took advantage of the occasion to inspect the mushroom sector. What did we notice? Mushroom consumption in Romania has a long, respectable tradition, but cultivation is still relatively in its infancy.

Now the European Union is releasing funding to modernise Romanian agriculture and horticulture, including mushroom growing, there is increasing demand for high quality spawn. In the Ceausescu era there were no less than eight state-run laboratories operating, but they disappeared along with his regime.

Future spawn production is planned in recently built industrial premises in Ploiesti, a small town in a strategic position 70 kilometres north of Bucharest. At one of the meetings we met Dr. Ioanna Tudor, a retired scientist from the Research Institute for

Plant and Mushroom Cultivation. She wrote a thesis on 'Perfecting the technology of Pleurotus production', and later published several books about mushroom growing. During her career she advised Pleurotus and Agaricus growers, and like many retired civil servants in Romania, she now continues this work independently. She knows all the ins and outs of the Romanian mushroom world, and shared her wide knowledge with us for Mushroom Business.

Wild mushrooms

Traditionally Romanians, like the majority of East Europeans, are enthusi-

astic edible fungi lovers. In the wild mushroom season local markets display a huge variety: boletus, morels and chanterelles are highly valued, but lesser known genera and varieties, such as *Calocybe gambosa* (St. George's mushroom), *Pholiota div. sp.* (Shaggy Pholiota) and *Lactarius div. sp.* (Milky caps) are also avidly collected. Surpluses are dried at home or stored partly conserved.

A rather strange but useful oddity made from fungi was a type of hunting cap, made from the outer layer of a Giant Puffball (*Langermannia gigantea*). We bought one as a souvenir and were surprised just how strong the material was!

Agaricus

Even though the Romanians are real mushroom lovers, mushroom cultivation is still in its infancy. The first grower made a cautious start producing mushrooms just thirty years ago. Nowadays there are still no more than ten growers active professionally, and even that title must be seen in the right context. They reach average production of 50 to 100 tons annually, some on imported Hungarian compost, others on locally produced material. The only commercial compost producer, the S.C. Holland, is situated in Satu Mare in North West Romania, close to the Hungarian border. This company owns two pasteurisation tunnels, each producing 50 - 60 tons of end product weekly. The compost is mainly inoculated with spawn from Hungary, and sold in plastic bags.

Yields vary from less than 20 kg/m² with Romanian spawn to 25 kg/m² with Hungarian spawn. These low figures can be attributed to the extensive approach to growing that often takes place in caves and the lack of hygiene.

Pleurotus

Pleurotus growing is even less advanced than Agaricus. The oyster mushrooms consumed in Romania mostly come from hobby growers or are sourced in the nature. The whole country has no more than three professional oyster mushroom growers, with only one reaching production levels above half a ton a week. The largest supermarket chain (Metro) only sells dried oyster mushrooms, as supplies are too irregular and of too inferior quality to be offered fresh.

The most commonly used cultivation method for oyster mushrooms is also primitive and risky.

Wheat straw, corncobs and sawdust or a blend of these ingredients act as raw materials. Occasionally products containing protein are used as supplements. Plunging into hot water often serves as pasteurisation, and inoculation takes place in normal outside air. Only the largest grower pasteurises in containers using steam. Each time 20 to 25 kilos of substrate are mixed with 2 to 4 weight percent of spawn, and the bags are filled by hand. Local spawn is usually used for oyster mushrooms, originating from quite amateur laboratories, which supply products of widely variable quality due to the primitive working conditions.

The combination of all these uncertain factors makes substrate preparation quite an adventurous undertaking:

In the best case yields can be achieved of 30 % in three flushes, but any statistical averages are wisely shrouded in silence.

Tunnel project

We visited a former railway tunnel, dug during the Second World War by the Germans between Ploiesti and Tirgoviste from two different directions through the Carpathian mountains. Bad calculations meant the two halves never met as intended, and the tunnel project was abandoned. The west part of the tunnel was recently leased to an oyster mushroom grower. The mushrooms were grown in the beginning on bought substrate, with the intention of developing the market. Now the front part of the tunnel is being opened up and given a suitable infra structure, thanks to support from SAPARD, the EU programme for East European rural and agricultural development. In the autumn the grower hopes to start cultivating on a larger scale.

Suinprod

The eastern province of Moldavia, near the town of Roman, is home to the largest pig and meat products producer in Romania. The director of Suinprod recently decided to start promoting cultivation of a number of mushroom varieties, and was prepared to invest a small amount into this activity. Two years ago we were granted the interesting task of transforming a rudimentary spawn laboratory into a fully functioning unit. And with success, as since then the first oyster mushrooms and shii-take are available in the shops owned by the company.



Hunting caps made from Giant Puffballs.



Dr. Ioanna Tudor with some of her work.



Hot water used to pasteurise oyster mushroom substrate.



Entrance to the railway tunnel.



Temporary shelving for oyster mushroom substrate.



Shii-take on sawdust substrate.



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