

Visit to Lehr Speisepilzk

As part of the international course 'Substrate preparation and cultivating lignicolous mushrooms' organised by Mycelia in December, we were looking for a suitable location to put theory into practice. We found the ideal spot in Germany.



A proud Regina Lehr with king oyster mushrooms.

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Unfortunately in Belgium there is no single grower to be found who produces both substrate and mushrooms. However, Willy and Regina Lehr from Lehr Speisepilzkulturen in Schwalmatal, Hessen, Germany were willing to welcome us. It was more than worthwhile making the long trip; it would have been difficult to have found a better place to immerse yourself in the daily reality of the mushroom grower.

New life for railway tunnels

Willy's company is the fruit of a limited budget, hard work and a healthy dose of persistence. A tale of survival in the face of adversity, code-red stress levels, but also of immense pride about the accomplishments.



Shiitake picking in the large tunnel.



Bags of substrate are sealed for sterilisation.

Twenty five years ago Willy and Regina converted the old barns on their farm into a company growing lignicolous mushrooms. Right from the start the couple produced their own substrates and incubated them before growing mushrooms on the result. And that all took place around the same courtyard. Far from the ideal situation, as cross-contamination was rife.

In 1992, on his quest for extra space, Willy Lehr came across two old train tunnels which offered a suitable micro-climate. The smallest tunnel consisted of one room with walls chalked white. Until recently this was used to grow shiitake. Currently the incubation and fruiting of shiitake (*lentinula edodes*) and king oyster mushroom (*pleurotus eryngii*) is concentrated in the



Willy Lehr explains how to grow king oyster mushrooms.

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largest tunnel. This tunnel is immense: during World War II it was even used as a munitions factory after a second floor was installed. Subsequently it was used to grow mushrooms until Willy took it over. The large tunnel is well insulated: when empty the temperature never rises above 12°Celsius in summer or below 6°C in winter. The RH fluctuates between 95% in summer and 85% in winter.

Substrate production

Our visit kicked off with the substrate production process in one of the converted barns. Under a conical, closed blender a few ladies were busy filling substrate into filter bags. Willy explained that he used to use the blender for bulk substrate production but that he had to cease this risky process due to a looming bankruptcy. It is indeed very difficult not to re-infect pasteurised substrate during cooling and spawning. Now he has switched to a system that uses individual bags his nightmare is over.

We followed the forklift with filled carts to the courtyard to load the autoclave. We then took a quick peek at the clean room, where three men in overalls were inoculating the substrates under a laminar flow unit. Willy has plans to renovate in the short term. He doesn't just want to increase the production capacity, he also wants to completely separate the sterile zone from the rest of the activities.

On the first floor of the same building we were shown a lovely combination of blooming king oyster mushrooms and white shimeji. Willy and son Mario filled us in on how they are cultivated, and Regina told us about the packaging and dispatching, which is concentrated on the other side of the yard.

Shiitake and pleurotus

After enjoying a delicious mushroom lunch at one of Lehr's customers we visited the railway tunnels. The small tunnel was practically empty, but the large one was optimally utilised, with a minimum of energy consumption. The incubation areas, closed off by plastic sheeting, were brimming with shiitake and pleurotus eryngii substrates, which tangibly radiated warmth, and heated the entire tunnel by a few degrees. The blocks of shiitake in the rear half of the ground floor were blooming luxuriantly in the comfortable climate. The king oysters grow above where the climate is a little cooler and more humid. After 18-19 weeks of incubation and maturing, Willy picks round 20% shiitake in one or two flushes. The blocks of eryngii incubate for seven weeks and the surface is then scratched. Ideally these blocks produce 20% in one flush.

Until some years ago the focus was on shiitake, but the main crop now is pleurotus eryngii. Not a bad decision as the cropping cycle is shorter but the sales prices are similar. At the moment annual production



The group near the entrance to the tunnel. In the middle Magda Verfaillie, behind her on the right Jürgen Kynast and right of centre Willy Lehr.

is 40 tons of eryngii, compared with just 20 tons of shiitake each year.

Discussion

During the visit a lively debate raged between the less and more experienced substrate producers about recipes, spawn and bags, incubation and cultivation parameters. The dialogue continued unabated in the growing rooms, downstairs by the shiitakes, and particularly a floor higher by the eryngiis. We were pretty impressed by the results, but for Willy improvement was the aim, as until recently the fruiting was more regular and the first flush more productive. We all tried to pinpoint a cause, which resulted in a constructive discussion which everyone could learn from and not in the last place our 'students' who were able to gain some valuable practical experience.

For more information about our training courses on lignicolous mushrooms see: www.mycelia.be/en ▶



Bouquet of white shimeji.