

BELGIUM

Official reopening Inagro

On 18 November, the Edible Mushrooms department of Inagro officially relocated to its new research facility. By investing in a thorough modernisation and expansion of the research facilities, the Belgium authorities have sent a positive signal to the mushroom sector.

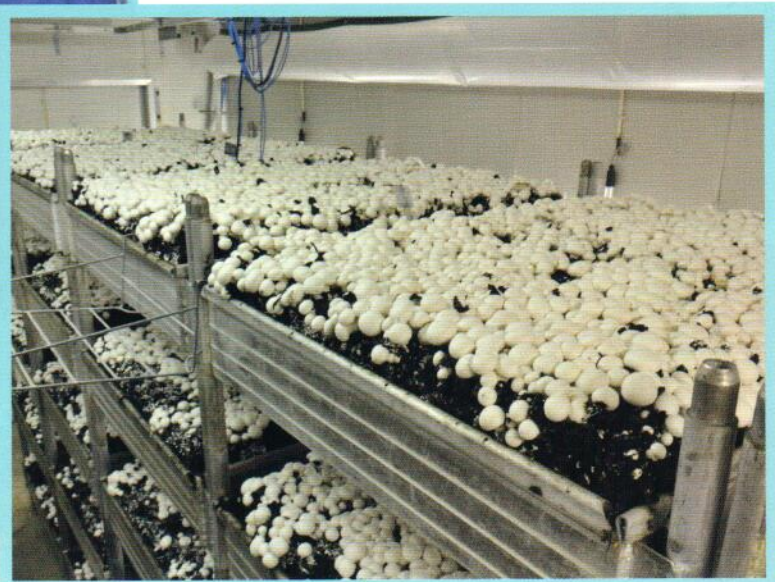
By Kasper Moreaux, Mycelia

The original 'Research Department for Edible Mushrooms' at Inagro was founded in 1972 with the mission of boosting mushroom growing in Flanders. And with success: the sector saw incredible growth in the 1970s and 1980s, with West Flanders as its epicentre. Mushroom cultivation has continued to evolve in the intervening years and the existing infrastructure of the trial station no longer met today's demands of functionality and sustainability. Some of the existing buildings were demolished, the remaining infrastructure was expanded and adapted to suit the greatly changed conditions found in practice and suitability for new research technology. Total investment: in excess of 1.7 million euros.

Above: The modernised research centre from the front.



Above: Button mushrooms being picked in the growing rooms at the research department (photo Inagro).
Right: Button mushrooms in the growing rooms (photo Inagro).



Opening

The opening on 18 November consisted of a practically-focussed session with presentations by Thei Staaks, Helen Grogan and Patrick Sedeyn, and an official part with speeches by Bart Naeyaert, Mia Demeulemeester, Nancy Pyck and a panel discussion. A tour of the premises was also part of the proceedings.

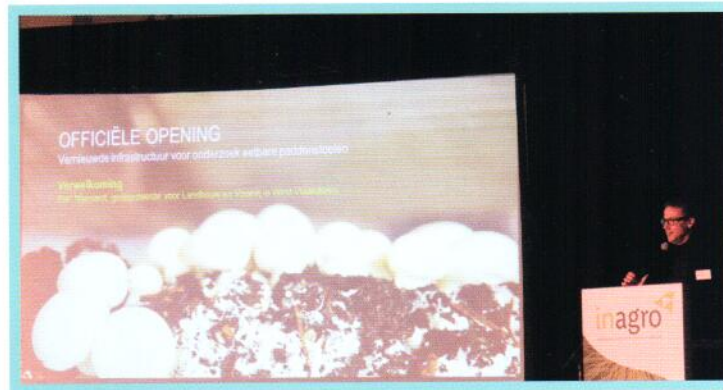
Bart Naeyaert, Deputy of the Province of West Flanders responsible for agriculture and fisheries explained: "The mushroom growing sector in West Flanders was once a leading light in the whole of Europe. However, under pressure exerted by Polish imports, the sector has been drastically pruned and restructured in the past ten years. The number of growers has shrunk considerably, but the total production volume of mushrooms has remained stable." In 2016 producers in West Flanders still account for 51.4% of total annual mushroom production in Belgium. "Numerous companies have reinvested in up-scaling, cropping cycles, logistics and operational reorganisation. Plus, a clear trend is the increasing preference of Belgian consumers for locally produced mushrooms, even if they are a little more expensive to buy."

In addition, the neighbouring countries do not have a government funded, research infrastructure with practical facilities. "Inagro's role as a unique centre of excellence for practice-focussed research and consultancy is also recognised and valued on an international level", according to Naeyaert. His words were backed up by the huge international delegation that attended the opening. Practically all the major companies and research institutes from the wider surrounding region were represented.

The Belgian sector

Cheap imports of mushrooms from Poland have steadily decimated the number of Belgian mushroom farms over the past 20 years, cutting numbers from 137 to 33. Half of these farms are found in West Flanders. The number of companies producing compost has also declined, from eight to three. The number of jobs in the sector has mirrored the falling trend. In 1996 mushroom growers employed a labour force of 1300, while today that figure has fallen to around 700. Despite this pattern, total production in Belgium has remained stable since the 1980s: it is currently estimated at 28,000 tonnes, of which some 15,500 tonnes are produced in West-Flanders.

Until the early 1980s the yield was 20 kg/m² in a 12-week cropping cycle. Partly due to research into fertilisers, better technical installations and improved hygiene, fewer diseases and better spread, yields of 30 kg/m² in a six-week cycle are no longer an exception. Patrick Sedeyn, research-



Bart Naeyaert at the official opening.

cher at the department: "Thanks to improvements in cultivation methods, we succeed in generating 85% of the yield in the first two weeks of harvesting. On some farms, the cropping cycle has even been reduced to four or five weeks." An organised marketing structure for the mushroom sector via auctions was set up in the 1970s. This marketing channel subsequently formed an additional incentive for further growth. Today, many growers still opt to market their produce via a cooperative. Others have direct contact with their customers and one group of growers has specialised in production for the conserving and frozen mushroom industries.

Close consultation

Since its inception, Inagro has maintained a good relationship with growers and industry suppliers in West-Flanders. "Composters are a vital lifeline for mushroom growing. Environmental and hygiene demands, and the investments these entailed, caused the composting sector to upscale its activities. Moreover, these efforts of composters in the past 20 years have led to compost with a consistently good quality", says Sedeyn. The preparations for modernisation therefore took place in close consultation with the sector. These talks revealed three important themes.

Firstly, the battle against pests and diseases has to be intensified, preferably using environmentally friendly methods. "Research, hygiene measures and, primarily, shorter cropping cycles, have resulted in a drastic reduction in the use of crop protection products. Mould diseases such as bubble and cobweb pose an immense threat to production. Prevention of pests and diseases is therefore one of the spearheads of our research at Inagro", explains Sedeyn. "Inagro now has three new trial growing rooms equipped with a hygiene sluice with under-pressure or over-pressure. In efficiency trials, when we infect healthy mushrooms with pests or diseases, there is no risk of cross-contamination or internal infection spreading to other mushroom crops".

The environmentally friendly battle against, and prevention of pests and diseases is one of the spearheads of Inagro research.



BELGIUM

Patrick Sedeyn explains research into pests in the new quarantine rooms.



Two new bunkers for research into phase I compost.



Construction of the new bunkers, equipped with heatable walls and mobile partitioning (photo Inagro).



all aspects of the composting and growing cycles. Sedeyn: "Until now, our compost supplier provided prepared phase 1 compost. Thanks to the new facilities, we can now perform our own studies into the blend of the initial raw materials, the decomposition process of the straw component (soaking so it can absorb more moisture) and test innovative raw materials for their suitability for mushroom growing. The two new test bunkers for phase I are unique: they are equipped with heatable walls and mobile partitioning, and enable all the phase 1 processes to be closely monitored and studied. The phase II tunnels has also been completely renovated and also have mobile partitions so parallel trials can be run in a single tunnel."

Bridging theory and practice

The key tasks of the edible mushroom department at Inagro are research with a focus on practical implementation and providing advice. The trial station has supported the sector for many years with research into aspects such as cultivation methods and reducing cropping cycles. "One of the major studies, the findings of which are still applied today and followed internationally, is the temperature and time development during the conditioning phase", explains Patrick Sedeyn. "We examine the decomposition of ammonia and the binding of easily decomposable nutrients in the compost after conditioning."

The choice of variety and crop protection are also subjects high on the priority list at the trial centre. "Prior to the nineties, varieties that pinned easily and produced small mushrooms were mainly favoured. The picking performance with these varieties was just around 10 kg/hour. Today growers mainly use varieties that produce medium-sized mushrooms. They also want a good harvest spread so they can graze pick the beds over a number of weeks. The ultimate aim is maximum yields with a minimum of picking costs."

Every grower can call on Inagro for (paid) extension services on subjects including cultivation advice, help with certification and analyses of compost, mushrooms and spent mushroom compost. The department also performs exploratory research for policy making institutes. Many suppliers in the private sector also use Inagro's services to have promising results laboratory tested under practical conditions. And finally, the edible mushroom department also welcomes interested visitors and students.

Secondly, more knowledge on how to improve the quality of compost is essential. "We are on a permanent quest to find alternative raw materials for mushroom growing. In the future, growers will have to depend less on expensive and exhaustible sources of raw materials like peat." And thirdly, the continually evolving landscapes of agriculture and horticulture require the necessary flexibility and multi-functionality of the research infrastructure. On the sector's request, Inagro has provided the research centre with all the facilities necessary for research into

