

From farm to factory

In 1991 Hans van den Boomen transformed his operations from manual picking to mechanised harvesting and has evolved into one of the largest and most advanced mushroom farms in the Netherlands. In 2004 The Greenery awarded him the title of mushroom grower of the year. In the meantime, he hasn't just rested on his laurels.

Together with Havatec, Nawi AGF, Verbruggen Mechanisatie (transport belts) and Kanters Electro (control cabinets) Van den Boomen and colleague grower Van Asseldonk have put an entirely new logistic system in place, with an sophisticated method of automatic grading, cutting and transporting mushrooms.

Some years ago, Van den Boomen installed six Havatec cutting machines, which automatically position the mushrooms. The cap diameter grading machines, also supplied by Havatec, used perforated transport belts. "This meant we could control the stem length, but lacked sufficient control over the quality", explained the grower. However the arrival of the new cap diameter grading system, following an eighteen-month development phase, has solved this problem.

Flexible grading

"Previously, with the 'old' cap diameter grading system with the perforated belts, the mushrooms tumbled and fell several times during grading", explains Hans Valk, director of Havatec.

Now the mushrooms are graded in such a way that each mushroom only falls once during the process. Grading is now done on a mesh system. The size of the openings in the mesh gradually increases in two directions. This has been technically achieved using a system of rods that gradually widen in distance in one direction and lines of flexible links ('trains'), which



In the foreground the mushrooms are graded on the new cap diameter sorting system, followed by cutting and the removal of sub-standard

also gradually separate in distance in the other direction.

This method gives far less damage, so the quality is clearly better, and also makes it possible to deliver in a higher number of grades "The perforated belts, with fixed opening sizes for the mushrooms to fall through, had a maximum of six different grades. Van den Boomen now supplies ten grades - but actually the possibilities are unlimited. You can set cap diameters with increments of 5 millimetres."



The innovative rod system with lines of flexible 'trains'. The cap diameter can be set in 5 millimetre increments.

Growers can supply precisely what the market wants.

Valk sees no disadvantages at all. "You need a lot of space to position the cutting machines and grading systems, but no more than was needed anyway for the perforated belt system." Grading with perforated belts is a standard feature at Dutch mechanical cutting farms. The heavy investment in the machinery is mainly recouped in the better quality and the wide range of grades possible. The



After any sub-standard examples have been removed, the mushrooms are placed into crates.



Just one employee performs the final inspection.

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extent of investment is determined by the required capacity.

1500 crates an hour

Once the mushrooms have travelled through the cap diameter grader and the cutting machines, they continue their journey in Nawi's innovative logistic system that ensures an even discharge of crates (capacity: 1500 crates per hour), and gives an up to date overview of the stock status.

The various crates are fed to ten different buffer lines. The crates then move to a palletiser unit, are placed on pallets and automatically labelled. The label states all the information important to the grower. All relevant data can be requested and processed at any time of the day via a link with the central PC in the farm manager's office.

Nawi AGF bv mainly produces complete production lines for the meat processing industry and logistic and traceability projects for the food industry, but according to sales manager H. Huiskens Nawi has now also supplied about five crate handling system to the mushroom sector.

Advantages

In the past ten people were employed to grade mushrooms at Van den Boomen's farm. Now the process only needs one person, for the final inspection, the other employees remove the sub-standard mushrooms. The crates are also transported automatically to the palletiser.

Huiskens is very satisfied with the entire system: "As far as automated processes go, we are a leading example in the sector, and the co-operation with Havatec was perfect." Within a year, he expects to increase the level of automation by installing a robot ('vision system') to take over the task of removing sub-standard mushrooms.

Doesn't this all make the company highly dependent on the system's correct func-

tioning? Huiskens: "We have 25 years of experience with these types of processes, and you have to discuss the routing very well with the customer right at the start, so the systems can be built to individual specifications."

Van den Boomen is also happy with the many innovative features of his company. "Harvesting a growing room used to take 6.5 hours. Now it takes 4.5 hours. Plus we supply better quality and the whole working environment is calmer. With the old system we had to check all

the employees. There's no need now, and the staff don't have to be experienced." What's important however is that one of the employees can carry out maintenance to the machines, and he has a maintenance contract with Nawi. "Our company is starting to resemble a factory even more, where aspects such as cultivation, but equally the technical processes and providing what the market needs, have to be just right."

The grading machines and palletiser units can be granted CMO subsidy.



The Nawi logistic system ensures an even flow of crates and labels the produce.

SMOOTH (CO)OPERATION

Hans van den Boomen, flanked by Hans Valk (l) and H. Huiskens (r) can reflect on 18 months of successful cooperation.

Van den Boomen's farm has eight growing rooms of 1922 m². The 4-week schedule produces 90 to 100 tons of mushrooms weekly. The compost comes from Hooymans, the casing soil from Euroveen. The company employs three full time and six part time workers, and a number of temporary workers from The Mushroom Factory. The mushrooms are marketed via The Greenery to F&F Europe.

