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NEW DEVELOPMENTS

The mushroom market has changed significantly in recent years from a growing to a repressing market. The prices are under pressure worldwide but a constant, good quality is still expected. The school of thought is that it would be advisable to lower the cost price and improve the production and quality.

Cost price:
Lowering the cost price can be achieved by working more efficiently. Christiaens is closely involved in several new developments regarding harvesting efficiency. In these companies they have increased the harvesting efficiency per employee by 70% over a longer period whilst still retaining the quality. They have also simplified handling and are looking at ways to improve the logistics of the harvested crop. Improving the shelf filling can also lower the cost price. By installing a weighing system on the head-end filler, the grower can optimally spread the mushroom substrate over the total shelf surface which will greatly improve efficiency.

Energy savings by example can be made by optimizing the climate control and the use of heat pumps in combination with storage of cold and heat energy in the earth.

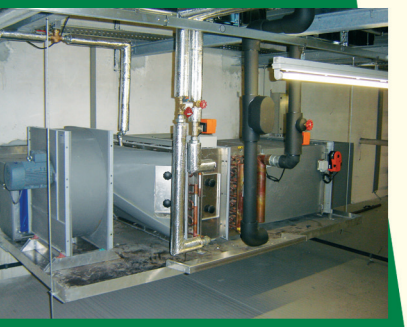
Quality:
Efficient climate regulation can have a positive effect on the quality of the mushrooms. The new 765.e control computer has more than 10 energy saving programmes and a number of extra facilities which can improve the crop such as a stimulation phase and co2 dope.
Composting companies increasingly use a dry and wet bulb control. This control prevents excessive temperature fluctuations and maintains stability of the climate. It also helps to prevent the compost from drying out whilst retaining optimal quality.

Quantity:
Increasing scale is also a way of lowering the cost price. Christiaens has, in cooperation with a number of customers, developed a range of installations and machines for a shelf width of 1.600mm and till a length of almost 100m. The shelf width of 1.600mm is the new standard for automated harvesting companies. The companies who still harvest manually most often work with shelves of 1.200mm, because this improves the harvesting efficiency and is ergonomically better. Christiaens has also developed a range of tailor made installations and machines for this shelf width.

FUNGHI D'ORO
ISTRANA, ITALY

Funghi D'Oro mushroom farm is a renovation project on an existing mushroom farm with a total growing surface of 3600 m2. Christiaens Controls designed and delivered a complete range of new air handling, control and automatic watering systems. In June 2005, 12 rooms were equipped and put into operation. The total installation time was 2 months.
The production nowadays is 1000 tons of mushrooms a year. The renovations resulted in a better quality and a higher production according to Romeo Fuser.

CONSORZIO FUNGHI DI TREVISO



FUNGHI DI QUERO
QUERO, ITALY

In 2005 the Christiaens Group started with the renovation of the existing mushroom farm of Funghi di Quero which is part of Consorzio Funghi di Treviso.

The renovation of the growing facility consists out of 12 growing rooms of 320m2 each. After just 2 months the first room was ready to be filled with compost and production was started. Total production of this farm is about 1000 tons of fresh mushrooms per year according to Giorgio Grespan.
The Christiaens Group delivered and installed air handling units, climate control system and automatic watering system. Christiaens also renovated the existing heating, cooling and steam systems.

"The advantages of the new growing rooms are extremely high production yields of premium quality mushrooms. Another benefit was the cook-out process which destroys all unwanted diseases."

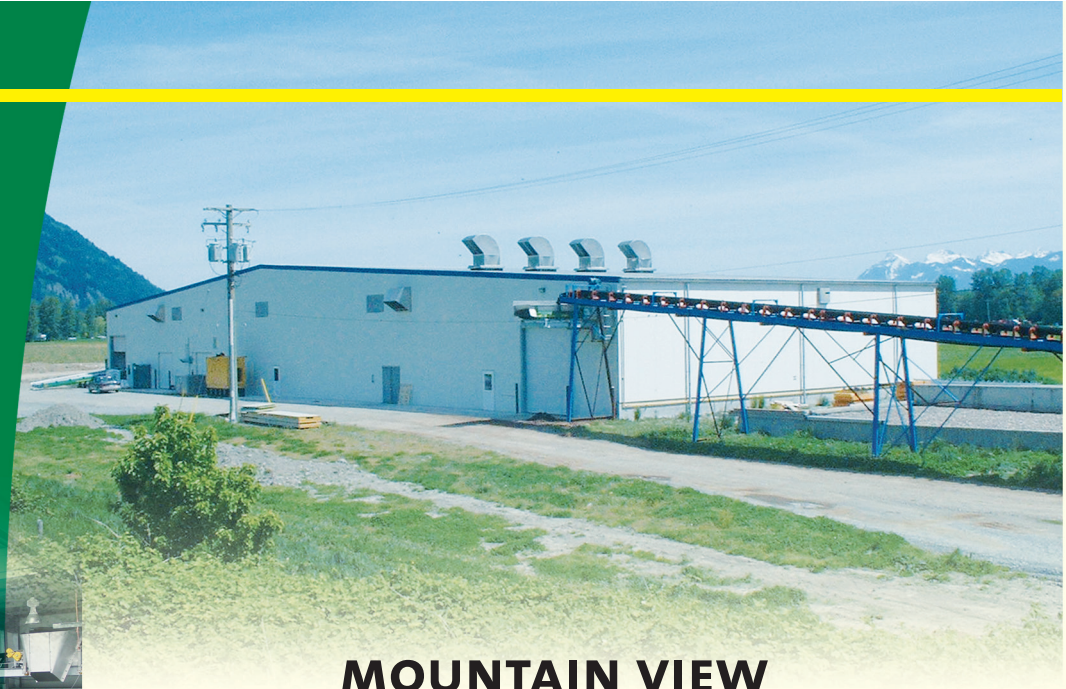
HOOYMANS COMPOST KERKDRIEL, NETHERLANDS

Hooymans Compost is a Dutch mushroom substrate producer who has been in the business since 1988 and produces and ships 2000 tons of phase 3 mushroom substrate.

Forced by the strict environmental legislation in the Netherlands Hooymans Compost had to make serious investments in order to expand any further.
In the past phase 1 compost was trucked in once a week from the distant compost plant of Fleuren and stored overnight on the outdoor concrete area in between the two tunnel blocks. Odour problems banned any further storage of phase 1 compost outdoor. Therefore, if Hooymans wanted to expand they had to go fully indoor.

After about one year of planning the first building activities started in the fall of 2004. 12 phase 1 indoor tunnels of each 1000 tons and 18 phase 2 tunnels of each 225 tons were built in about 1,5 year time. The existing phase 2 and 3 tunnels will now only be used for phase 3 substrate with a production capacity of about 3500 tons per week.
An ingenious system of air controllers was installed, leading the air from the intake through various stages of the process. Several air scrubbers and bio filters treat all the air before it leaves the installation.

"The new installation will give us much more flexibility. We used to be able to fill the tunnels only once a week. Now we can fill the phase 2 tunnels all week long. Also the fact that we have the phase 1 compost in our tunnels gives us the possibility to make the exact compost that we require." Says Jan Hooymans. "The reason that we chose for Christiaens was obvious. We have already been working with them since we first started this company"



MOUNTAIN VIEW ABBOTSFORD, BC, CANADA

Mountain View is a mushroom farm in British Columbia which produced and filled phase 1 compost for their growing rooms.In order to increase the mushroom production there were two ways to go: Increasing the number of growing rooms and keep filling phase 1 compost or shorten the cycle time in the existing growing rooms by building a phase 2 and 3 tunnel facility and start filling and casing phase 3 substrate.

In 2004 Art and Ron de Ruiter decided to build a Phase 2/3 tunnel facility. The time they need, in cooperation with Christiaens, from design to start up was about 1 year. The new tunnels were connected to their existing Phase 1 operation by a belt system. The 4 tunnels have a capacity of 200 tons input of Phase 1 each. Christiaens delivered the building, technical installation and machinery turnkey.
The floor of the the tunnels is a gridfloor and are filled by a filling cassette, a net pulling winch empties the tunnels. The Christiaens air handling unit and CCF control system with manual control take care of a good pasteurization and incubation process.
The filling and emptying hall are supplied from fresh air to create overpressure during working hours and for heating the hall during not working hours.

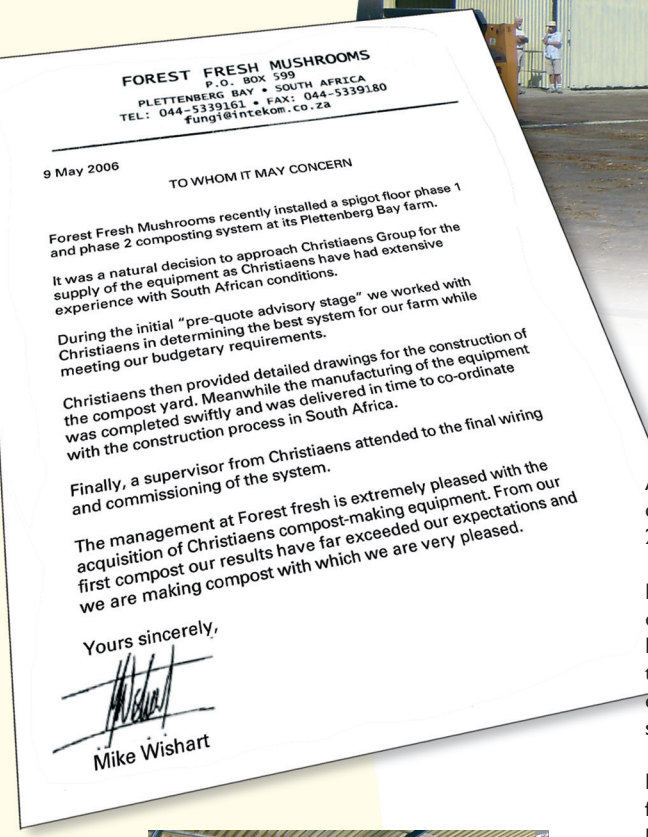
Parallel to the start of the phase 3 production they started filling with a Christiaens hydraulic head-end filling machine.

The advantages of the whole transition are obvious; lowering the production costs and increasing the productivity and quality.

In 2001 Christiaens Controls delivered also the air handling and control systems for 22 growing rooms for Mountain View Mushrooms Ltd. They also engineered the central energy systems, which were constructed and delivered locally.

FUNGIS SPOLKA MAKOW, POLAND

In September 2005 Fungis started with this project. They built 9 tunnels (size 4m by 35m) for Phase 2 and 3 in a building time of 7 months. The first tunnels were filled in March 2006.
The Christiaens Group supplied the filling spawning and emptying equipment for the 9 tunnels.
Fungis sells compost in bulk and in blocks. The company Fungis is 15 years old, the existing facility has a production capacity of 900 tons Phase 2 per week. The new facility adds another 300 tons of Phase 3 weekly.
"The advantage of the new facility is new technology, ability to keep high hygiene and better control over compost, new equipment and no malfunctions. That is the reason we chose for the Christiaens Group" Paulina Wyszkowska tells us. "Christiaens is also the leading producer in machines for compost known for good quality."



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TO WHOM IT MAY CONCERN

Forest Fresh Mushrooms recently installed a spigot floor phase 1 and phase 2 composting system at its Plettenberg Bay farm.

It was a natural decision to approach Christiaens Group for the supply of the equipment as Christiaens have had extensive experience with South African conditions.

During the initial "pre-quote advisory stage" we worked with Christiaens in determining the best system for our farm while meeting our budgetary requirements.

Christiaens then provided detailed drawings for the construction of the compost yard. Meanwhile the manufacturing of the equipment was completed swiftly and was delivered in time to co-ordinate with the construction process in South Africa.

Finally, a supervisor from Christiaens attended to the final wiring and commissioning of the system.

The management at Forest fresh is extremely pleased with the acquisition of Christiaens compost-making equipment. From our first compost our results have far exceeded our expectations and we are making compost with which we are very pleased.

Yours sincerely,

Mike Wishart

FOREST FRESH MUSHROOMS PLETTENBERG BAY, SOUTH AFRICA

After a building time of 6 months Forest Fresh Mushrooms started the new compost facility in June 2005. At the moment they are producing 25 tons of Phase 2 per week and they have the possibility to increase the production to 50 tons.

For 3 years compost was supplied by others before Forest Fresh Mushrooms decided to build their new compost yard. The old compost facility of Forest Fresh Mushrooms was outdated and to small for their growing requirements. They chose to build a compost facility with double capacity to accommodate any future expansion. Because of the limited size of the project, the choice for a spigot floor system for Phase 1 and Phase 2 was the most cost effective.

Mike Wishart from Forest Fresh Mushrooms: "The biggest advantage of the new facility is that it allows for a reasonably large margin of error for the variables in Phase 1. In other words, if the water is not right or the recipe is incorrect, the composting process can still proceed and the errors can be ironed out to a certain extent with the moderation of air and oxygen being blown through the compost. Additionally the system produces consistent compost."

"The reason for choosing the Christiaens Group on this project was that the Christiaens Group has the most experience with conditions in South Africa. We also had been exposed to the workmanship and proffesional approach Christiaens has applied to other projects in South Africa. Christiaens also provides backup advice and has been supportive during our production of compost."

BALTIC CHAMPIGNONS, GRUZDZIAI SIAULIAI, LITHUANIA

From the end of 2004 until autumn 2005, Baltic has built 10 tunnels with a total output capacity of 300 tons Phase 3 per week.
New plans for an expansion of another 14 tunnels to a total of 24 tunnels with a total capacity of 900 tons Phase 3 per week are already in progress. In this stage Baltic will add a winch on the emptying side with a central conveyor and truck loading system.

The Christiaens Group supplied the filling spawning and emptying equipment for the 9 tunnels. "The next time we'll choose definitely machines from Christiaens because they supply good machines. We chose for quality and price. The Christiaens Group is also known as a good and stable organisation with a lot of knowledge." Says Kestutis Juscius, owner of the company.

ADELAIDE MUSHROOMS WOODCROFT, AUSTRALIA

Adelaide Mushrooms is South Australia's largest mushroom grower with its original farm at Woodcroft and building an new farm at Monarto. The company is owned by the Schirripa family.
With the commissioning of the new facility built by Christiaens in January, the Company's production has risen from 38,000kg to over 60,000kg per week of fresh mushrooms on the current site as the spawn running rooms were converted to grow rooms.
When the next phase of building is completed at the new farm, the Company will produce in excess of 140,000 kg per week and it is still intended to maintain its strong quality policy to maximise market return.

After completing the Phase 1 bunker composting system, Adelaide Mushrooms embarked on nine Phase 2/3 tunnels, which were linked into the Phase 1 shed by conveyor. It is a complete system, which allows the emptying of Phase 1 direct into Phase 2 in a matter of minutes and then Phase 2 into Phase 3 similarly.

The facility has a capability of producing up to 420 tons of Phase 3 substrate.

The project which was planned from start to finish has the distinct advantage of the whole operation from Phase 1 through to growing will be done in sequence and with the minimum of handling. It will be "production line" and as efficient as it can get. Everything will be linked continuously from start to finish with no man handling, no transport: that is with the minimum of expense and maximum efficiency.

Chairman Douglas Schirripa of Adelaide Mushrooms:
"The flooring was all layed by us in readiness, and then the Christiaens group flew in and were able to complete the total project in 5 months from beginning to end with the minimum of fuss and delay."

"It was a giant project to ensure everything was here on time and ready for construction. The Christiaens Group are to be complimented on the liaison to ensure this all happened like clockwork!"

"Being so far away from all suppliers way "down under" in Australia, it was important to ensure we were able to get the best possible plant, equipment and ongoing service."

"More importantly it was the openness of discussion and viewing of their plans, which gave me the confidence to go with the Group. Al this was done with confidence in the confidentially of our discussions."

"I would highly recommend their services and would not do it any other way after this experience!"

ADELAIDE MUSHROOMS (NOMINEES)PTY LTD

MARINA LTD. / TEVA POST
MOSHAV HOSEN, ISRAEL

Marina Ltd. expended their compost production with 5 extra Phase 2/3 tunnels and a completely new Phase 1 facility with the capacity of 800 tons weekly.

For the Phase 2/3 tunnels Christiaens supplied the technical installation, grid floors, tunnel nets, engineering and consultancy. It took 6 months to complete this expansion.
The new Phase 2/3 tunnels are in production since April 2006. The expansion enables the company to supply new mushroom farms with Phase 3 substrate.

To make sufficient amount of Phase 1 compost for their own Phase 2/3 facility Marina Ltd. decided to build a Phase 1 indoor system with overhead filler, 3 bunkers and 2 bio filters as well.
This project started in October 2005 and will be in production approximately in july/august 2006. For the Phase 1 facility the Christiaens Group delivered the technical installation, machinery and the doors.
The system is especially designed and constructed to meets the requirements of the environmental authorities.
Tommy Gruenwald of Marina Ltd.:"after long negotiations with several companies, we were convinced that the Christiaens Group could provide us with the most professional and efficient project!"

GLOBAL PROGRES
TOPOLCIANKY, SLOWAKIA

Global Progres is a compost facility and growing farm owned by the Münzner company from Germany.
The farm has a weekly production of 44 Tons of quality mushrooms harvested in only 2 flushes. With the new investment they have the potential to increase the production to about 60 Tons per week.

Prewetting and phase 1 were done the conventional way with rigs and a turning machine partly indoor and partly outdoor. Global Progres already produced phase 2 and 3 compost in 9 small size grid floor tunnels.

In order to upgrade the farm and to improve quality and consistency mr. Münzner decided to invest in a new Phase 1 compost yard and in new phase 2 tunnels. The 9 existing small tunnels can now all be used for phase 3. Christiaens helped designing both installations with the goal of using the new machines both in phase 1 as in phase 2. Also the existing buildings were integrated; the new phase 1 bunkers are build under an existing roof with wooden girders.
The phase 2 tunnels are build completely new in order to guarantee a 100% pasteurisation.
The Christiaens Group was chosen to deliver all compost handling machines, air handling units, computer controls and do all general engineering for both the buildings.
"Besides having the best offer" there were more reasons to go for Christiaens says mr. Münzner. "The fact that Christiaens is a reliable partner and has all the knowledge to do the general engineering were decisive".

Christiaens Group

THE POWER OF COMBINED EXPERIENCE

PROJECTS IN PROGRESS WORLDWIDE 2006

Hooijmans Compost BV, The Netherlands	Phase II facility
Jacobs BV, The Netherlands	Expansion 4 growing rooms, turnkey
Arya Rooiesh, Iran	Expansion 8 Phase I bunkers / 11 Phase II tunnels
Wrona, Poland	Expansion 8 Phase II/III tunnels
Snowcap, South Africa	Phase I/II facility
Highveld, South Africa	6 growing rooms
Dofe, Hungary	6 growing rooms, turnkey
Kriznic, Croatia	6 growing rooms, turnkey
Agrifunghi Soc.Coop. A.r.l., Italy	8 growing rooms, turnkey
Società Agricola Belfungo s.s., Italy	12 growing rooms, turnkey
Mycelco Substrate, Canada	15 Phase II/III tunnels, turnkey
Edelweiss Ltd., Russia	12 growing rooms
Bio Fungi Kft, Hungary	Expansion 8 Phase II/III tunnels
Flixton Mushrooms, England	Phase I bunkers
Apex, Canada	12 growing rooms
Davidyan, Israel	Phase I facility
Champra, Spain	Mixing and filling line Phase 1
Champigraja S.C. Spain	Head-end filling machine and growing equipment
Delgoe Russia	Bunker filling equipment
Peeters Mushrooms Canada	Head-end filling machine

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