

## BULKSUBSTRATE

In this shopping cart, we will put only products that contain fungus or have been made using some kind of fungus! You will be amazed at the variety it holds bread, coffee, tea, beer, cheese, quorn and salami. Whether fungus is used to pre-ferment malt for the manufacturing of beer or for preparing coffee beans before roasting, it is used in their production process.. Many other products, pharmaceuticals for example, also depend on fungus crops. And then of course, there are fresh mushrooms themselves. One might even wonder what is not made using fungus ...

But there is no need to go running to the woods for mushrooms today, because they can be grown in all seasons to supply industrial applications.

ITW :

Magda Verfaillie

Managing Director MYCELLIA

Ghent = Belgium

« Here we are in our cold room. Here the final products are stored and cooled completely for one or two days before packaging. Because this product is alive. And it must not warm up during transport. »

This living product, substrate, is simply sown with the right strain of fungus and then you just wait...

ITW :

Jürgen Kynast

Managing Director

Pilzgarten= GERMANY

« Growing mushrooms and fungus is very easy. All you need is the right substrate. Then you pierce holes in the sacks and the mushrooms grow. After that, you simply harvest them and put them in a basket and you can sell lovely mushrooms. But this is a risky business because it requires a substrate with absolutely no contamination. Otherwise you can simply discard the entire harvest. And it takes 20 weeks to grow to shiitake mushrooms for example. So you only realize that they have been contaminated 20 weeks later, and your losses are enormous. »

ITW :

Magda Verfaillie

Managing Director MYCELLIA

Ghent = Belgium

« Many farmers underestimate the difficulty of producing substrates for different kind of mushrooms. If they are exposed to contamination for several months, there is no way to recover, and the company goes bankrupt. »

In addition, the traditional manufacture of the product is something like an enormous kitchen recipe. This is particularly difficult for small business because it requires a huge amount of handling time and energy. Throughout the entire process, a means must be found to ensure better sterility of the product, and to save time and energy...

ITW :

Magda Verfaillie

Managing Director MYCELLIA

Ghent = Belgium

« Ours is a very small company. Consequently we do not have a large research budget. For some time now we have been thinking about working with European partners. In fact, we have already done joint projects with the EU in the past and the results of the previous research satisfied us

completely. Consequently, we thought that we could try again for this substrate manufacturing project. »

The European Union supported the BULKSUBSTRATE project that groups small businesses from Belgium, Germany, Spain, Ireland, Malta, Norway, Italy and even Israel.

The research that began in January 2004 also included two research centres: the Catholic Higher Educational Institute in Ghent, Belgium and the Wam Institute in Rome, Italy.

BULKSUBSTRATE is a cooperative research project that cost € 1 945 000 and the European Union contributed € 1 008 000.

One of the objectives targeted by the partners was to replace this crucial stage of production ...

ITW :

Magda Verfaillie

Managing Director MYCELLIA

Ghent = Belgium

« As you can see, the people here wear sterile clothing to avoid contaminating the product. Let's go see the place where we open the sacks. This is where we inoculate the substrate with the right strain of fungus. The few seconds during which the sack is open are enough to produce contamination unless we are extremely careful. This is why we have tried to eliminate the stage in the new process. In addition, as you can see, the traditional process takes a lot of time.»

ITW :

JORIS HOZEE

Pr. KaHo

Ghent = Belgium

« Here is the result of the collaboration between eight SMEs and two research centres. In principle, this is a combination of existing machines and new technologies. The raw material is injected into a dust-free tank. In a mixer, steam is injected directly to moisten everything and sterilize at the same time. After sterilization, we cool the product. Then we inoculate it and the material is transported under aseptic conditions to the filling station where it is put in plastic bags. »

There is only one thing in common between the old method and the new, supplying the machine. Everything else is done automatically, but above all in a closed, aseptic environment. The operation takes less time and, moreover, consumes much less energy!

ITW

MAGDA VERFAILLIE

« What has changed?. Externally, nothing, because the final product is similar to what it always has been. However, our objective is to limit energy and labour costs thanks to the new system. Traditionally, we needed 36 hours for the production and with the new system we think we can cut it down to only five hours! »

The Norwegian company MYO, grows mushrooms, amongst other things, and is particularly pleased with the performances of the prototype.

ITW :

JOHNNY AFANOU

MYO Norway

« The project has enabled us to save energy, but what really interests us is the sterilization provided by the machine. »

ITW :

HAGON EGGEMOEN

MYO Norway

« Our company also makes cheese and soon we want to come out with a new range of products. Cheese with mushrooms. »

After all, certain mushrooms have the property of reducing the quantity of fat absorbed by the organism when they are mixed with certain naturally fatty foods like ... cheese. There's no doubt, mushrooms can have a variety of uses!.

ITW :

GEERT BRUGGEMAN

VITAMAX Belgium ...

« Fungus and plant extracts can play an important role in animal feed because they can be used as alternatives for antibiotics. And as you know, antibiotics (in animal feed) will be prohibited on 1 January 2006.

... the advantage for the producer is that one can reliably invest in a food additive that does not fall under the future prohibition of antibiotics. »

The market is so huge that it is hard to estimate. Here is one figure: Europe with 25 Member States spends at least € 600 million per year in antibiotics for animal feed!

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*Cavaleiro 02 299 86 67*

*Stefana association additif alim animale : M JENS 02 639 66 60*

*IFA : 02 543 75 60 M. delforge*

ITW :

JORIS HOZEE

Pr. KaHo

Ghent = Belgium

« Each partner had its own requirements and we combined them all in a single prototype. This is why we have developed a very elaborate machine. And that is the real advantage of this type of project. »

Magda Verfaillie

Managing Director MYCELLIA

Ghent = Belgium

« I don't think I can speak in the name of all partners. I think that, all in all, we have gained very enriching collaboration with this machine, which offers a promising future to us all. »