# Mushroom nutrition

Certain species of edible mushrooms have been used in Japan for more than 3000 years for their ability to maintain good health and to excrete toxicity from the body. Today´s science refers to these properties as anti-oxidant, anti-viral or immune nutritional effects, among others.

We believe that present-day complex multicomponent and composite diseases, particularly lifestyle diseases, can not be successfully treated by extracts.

The power of natural medicines lies in the use of complex natural ingredients whose specific health-promoting properties have been investigated and verified by many generations.

Mycology Research Laboratories
Global Leader in Mushroom Nutrition

# Produced and patented in Europe

MRL mycological products are cultivated on sterile (autoclaved) substrate, in Europe under ISO 22000 : 2018 standarts rigidly conforming to conditions that are applied to the manufacture of conventional pharmaceuticals.

The mushroom is then manufactured in the Netherlands into 500 mg tablets and in various powder forms to FSSC 22000 (Version 4.1) standards.

Veterinary products are manufactured under veterinary registration number (NL217476).

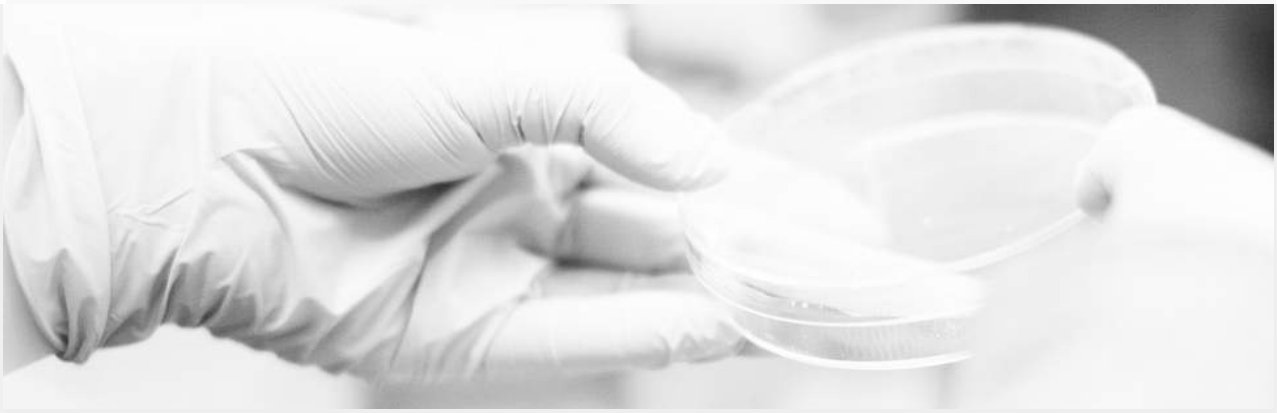
Moreover, all powder presentations are produced and manufactured in accordance with both EU and UK organic standards.

The proprietary technology used in the cultivation process ensures that the resulting standardised product is free from contamination by other fungi and that pesticides are absent.

NL-BIO-01
EU/Non EU Agriculture

PT-BIO-01
EU/Non EU Agriculture

# Key Factors



## 01 Raw Materials

- Proprietary proven quality strains of fungi
- Selection of optimal substrate
- Only grains of certified organic origin
- Monitored water source

## 02 Sterilisation

- Substrate dispensed to micropore filtered container (<0.1 micron)
- Steam sterilised
- Temperature verified by calibrated probe

## 03 Inoculation

- Substrate cooled by HEPA filtered air
- Inoculated with pure culture under aseptic conditions by HEPA filtered air
- Hermetically sealed

## 04 Incubation

- Controlled environmental conditions by HEPA filtered air
- Regulatory inspected
- Standardised incubation period
- Documented harvesting stage

## 05 Drying

- Low drying temperature
- Moisture content monitored to determine completion of drying

## 06 Ganulation

- Controlled feed rate to keep equipment temperatures low
- Granulated product is bagged with desiccant and stored in sealed buckets

## 07 Tableting

- Direct compression - no stress applied to active material
- High functionality binder: silicified microcrystalline cellulose

## 08 Quality control

- Heavy metal analyses and microbiological testing (aerobic bacteria, yeast and mould, E. coli and total coliforms)
- Independently verified

# Performance Overview

## What lies behind the efficacy of MRL fungal products

### Production Process

The source powder contains the whole mushroom that is cultivated into on sterile substrate. This is one of the only cultivation process which cultivates a mushroom that is free from contamination by other fungi, pesticides and heavy metals. The cultivation system is proprietary and certified, allowing for standardised production of individual mushroom nutrition products.

Processing is carried out under the same rigorously controlled conditions that are applied to the manufacture of conventional pharmaceuticals. The result is a standardised whole mushroom dried at low temperature, which is further ground while maintaining a low temperature to form a finely ground powder that is either the final product or is further processed into tablets (500 mg). The choice of binders and additives used in manufacture renders these tablets **suitable for vegetarian and healthy diet use.**

### Delivery of β-glucans , Enzymes and Secondary Metabolites

Unlike an extracted mushroom product that may be composed of a specific β -glucans, MRL mushrooms provide not only β-glucans, but also enzymes and secondary metabolites.

Enzymes are an essential pillar of the efficacy of mushrooms. These protein substances are part of, and partially control, many vital processes of metabolism, contributing greatly to the promotion of good health, protecting the body and also aiding the treatment of conditions.

MRL mushrooms have been shown to possess a large number of secondary metabolites, which may play an important role in the immune function of the host and hence could be used in immunotherapy.

### Content of Micro and Macro Elements

Dietary fibre, vitamins, trace elements, terpenes, sterols, phenols, secondary metabolites, amino acids and polysaccharides (β-glucans) are in a natural context, i.e. with intact protein binding and unconcentrated extracted form.

### Sterile (aseptic) production

The result is a product requiring no thermal treatment for preservation purposes. During the processing (drying, grinding) the temperature is monitored to be as low as possible, in order to preserve a maximum of active ingredients in the final products. It is well established that higher temperatures can reduce the enzymatic activity.

# Research & Development

## Nutrition with Mushrooms Supported by Science

In recent years, Mycology Research Laboratories has distinguished itself through clinical research collaboration with renowned institutions in Europe, ensuring the scientific efficacy of its products in various health conditions.

MRL is committed to maintaining clinical research collaboration and ensuring continuous education for qualified healthcare professionals in the application of Mushroom Nutrition in human and animal health.

You can find the list of studies and clinical articles at:
Mycology Research Laboratories - Research & Development


Some institutions that have collaborated with Mycology Research Labs.