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Product Introduction

The defatted mealworm powder is a new kind of insect protein raw material made from dried yellow mealworm after degreasing. Widely used in fish, pet, poultry, livestock feed. It is the best protein material can replace fishmeal.



Protein	≥65% (usually≥68)
Fat	≤10%
Fiber	≤4%
Ash	≤10%
Moisture	≤10%
Calcium	0.5~1.8
Phosphorus	0.2~0.8

Amino Acid Content

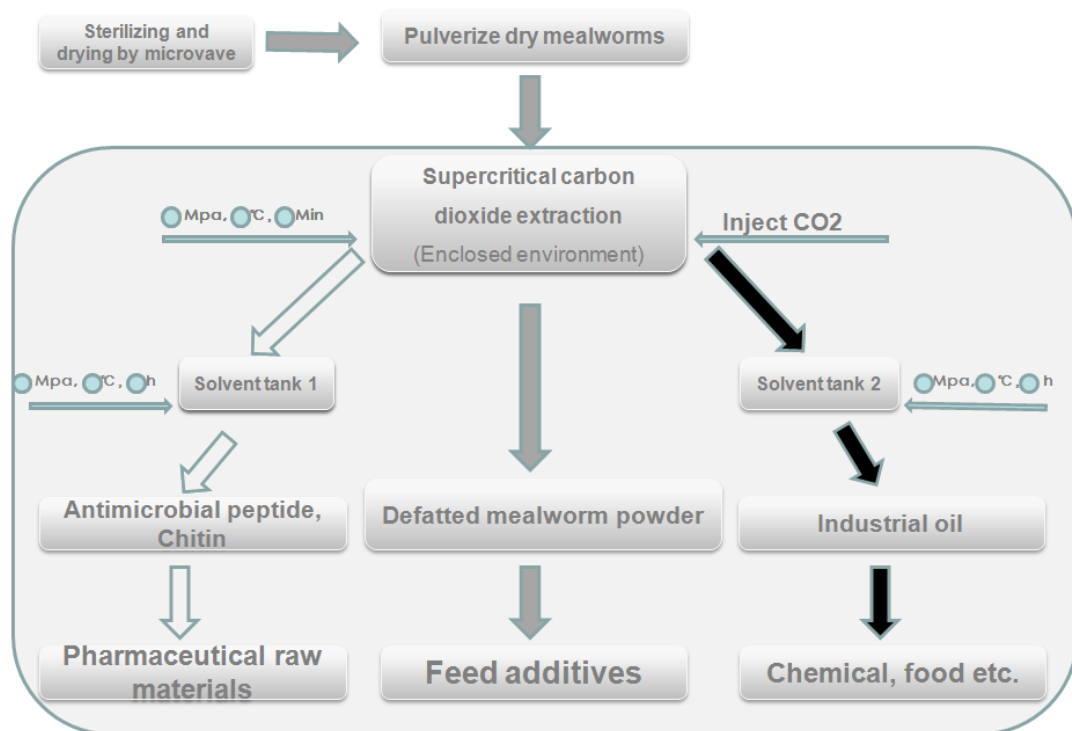
Sections	Analytes(Units)	Methods	Rpt Lmt	Results
Q2 PC	Aspartate (%)	GB/T 18246-2019 3	0.01	6.36
Q2 PC	Threonine (%)	GB/T 18246-2019 3	0.01	2.59
Q2 PC	Serine (%)	GB/T 18246-2019 3	0.01	3.61
Q2 PC	Glutamate (%)	GB/T 18246-2019 3	0.01	8.57
Q2 PC	Glycine (%)	GB/T 18246-2019 3	0.01	3.27
Q2 PC	Alanine (%)	GB/T 18246-2019 3	0.01	3.14
Q2 PC	Cystine (%)	GB/T 18246-2019 4	0.01	1.43
Q2 PC	Valine (%)	GB/T 18246-2019 3	0.01	2.77
Q2 PC	Methionine (%)	GB/T 18246-2019 4	0.01	1.07
Q2 PC	Isoleucine (%)	GB/T 18246-2019 3	0.01	1.97
Q2 PC	Leucine (%)	GB/T 18246-2019 3	0.01	4.28
Q2 PC	Tyrosine (%)	GB/T 18246-2019 3	0.01	1.44
Q2 PC	Phenylalanine (%)	GB/T 18246-2019 3	0.01	1.95
Q2 PC	Lysine (%)	GB/T 18246-2019 3	0.01	4.13
Q2 PC	Histidine (%)	GB/T 18246-2019 3	0.01	0.79
Q2 PC	Arginine (%)	GB/T 18246-2019 3	0.01	4.46
Q2 PC	Proline (%)	GB/T 18246-2019 3	0.01	3.15

Heavy Metal Report

Test Item(s)	Unit	Test Method(s)	Test Result(s)	LOQ
Lead(Pb)	mg/kg	GB/T13080-2018	3.97	2.00
Cadmium(Cd)	mg/kg	GB/T13082-1991	ND	0.50
TotalArsenic(As)	mg/kg	GB/T13079-2006	0.98	0.01
Mercury(Hg)	mg/kg	GB/T13081-2006	0.013	0.01
Fluorin(F)	mg/kg	GB/T13083-2018	8	3
Ethoxyquin(EQ)	mg/kg	GB/T 17814-2011 I	ND	8.8

SGS Chemical Test

Test Item(s)	Unit	Test Method(s)	Test Result(s)	LOQ
Malachite Green (sum of malachite green and leucomalachite green, indicated as malachite green).	µg/kg	GB/T 19857-2005 I	ND	-
Malachite green.	µg/kg.	GB/T 19857-2005 I.	ND	5.0.
Leucomalachite green.	µg/kg.	GB/T 19857-2005 I.	ND	5.0.
Crystal Violet (sum of crystal violet and leucocrystal violet, indicated as crystal violet)	µg/kg.	GB/T 19857-2005 I.	ND.	-
Crystal violet.				
Leucocrystal violet.	µg/kg.	GB/T 19857-2005 I.	ND.	5.0.
Abamectin.	µg/kg.	GB/T 19857-2005 I.	ND.	5.0.
Ivermectin.	µg/kg.	GB/T 21320-2007.	ND.	5.00.
Enrofloxacin.	µg/kg.	GB/T 21320-2007.	ND.	5.00.
	mg/kg.	Department of Agriculture Bulletin No. 2349-5-2015 .	ND.	0.1.
Sarafloxacin.	mg/kg.	Department of Agriculture Bulletin No. 2349-5-2015 .	ND.	0.1.
Ciprofloxacin.	mg/kg.	Department of Agriculture Bulletin No.2349-5-2015 .	ND.	0.1.
Flumequine.	mg/kg.	Department of Agriculture. Bulletin No. 2349-5-2015 .	ND.	0.1.
Oxolinic acid.	mg/kg.	Department of Agriculture Bulletin No.2349-5-2015 .	ND.	0.1.
Chloramphenicol.	µg/kg.	GB/T 22338-2008	ND.	0.1.
Florfenicol.	µg/kg.	LC-MS-MS.	ND.	0.1.
Erythromycin.		GB/T 22338-2008	ND.	0.1.
Spiramycin.	µg/kg.	SN/T 1777.2-2007.	ND.	20.
Tylosin tartrate.	µg/kg.	SN/T 1777.2-2007.	ND.	20.
	µg/kg.	SN/T 1777.2-2007.	ND.	20.



The picture above shows the process of defatted mealworm powder. Extracted mealworm oil can be used as high-grade cooking oil and transformer oil; Peptide and chitin can be used as biopharmaceutical raw materials. The remaining mealworm protein powder can be used as high-quality raw materials for feed mills and breeds.

It is because we extract and sell mealworm oil, antimicrobial peptides and chitin that why the price of our defatted mealworm powder is balanced.

Different from ordinary fishmeal and other animal protein raw materials, defatted mealworm powder contains rich antimicrobial peptides, immunoglobulin and chitin, which can improve the anti-infection and immune regulation ability of the aquatic and animals,

and it has obvious effects in fish, shrimp, crab, eel, poultry, pigs, pets and other feeds.

With its unique function, high absorption, utilization rate and stable price, defatted mealworm powder has become a very popular new animal protein raw material.

Some Aquatic Test Feeding Effect:

South America Prawns

Improve the uniformity and survival rate of prawns.

Prawn has strong vitality and improved anti-stress ability.

The feed coefficient decreased.

Crab

The survival rate of river crabs is improved.

The crab fleshy much, plumpness increases.

The incidence of shell syndrome has declined.

Grouper

Grouper survival rate improved.

The incidence of black body disease and rotten body disease in grouper has decreased.

Groupers grow faster.

Snapper

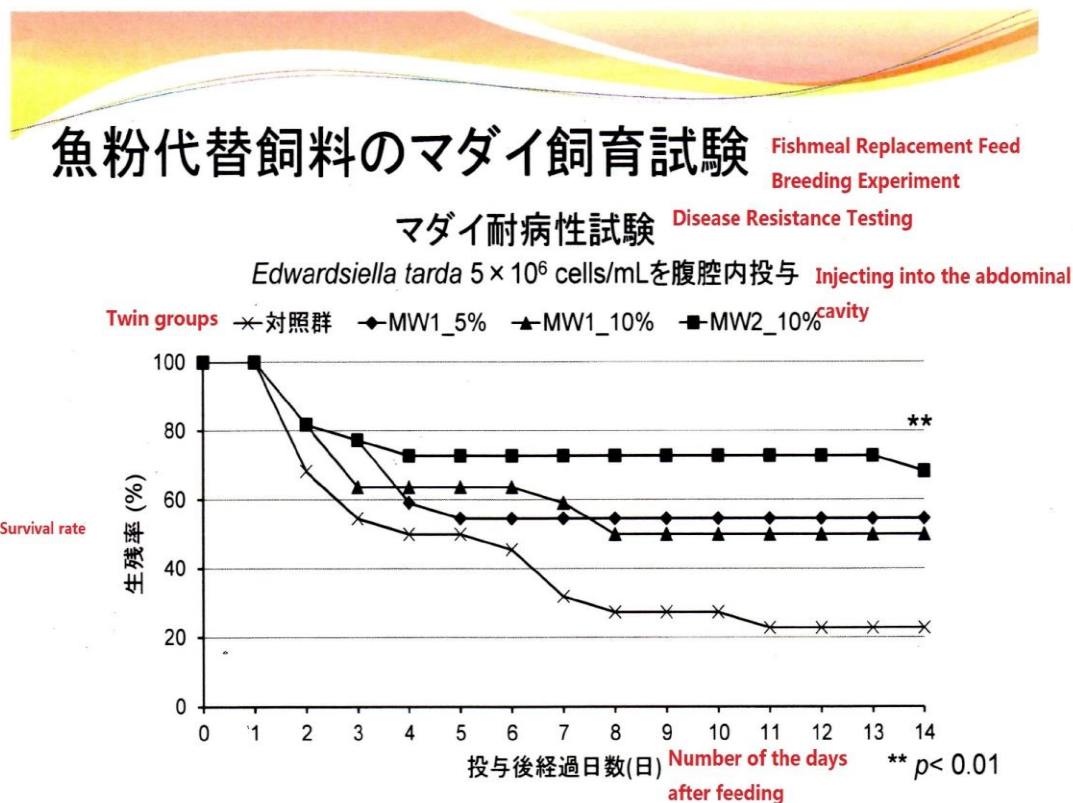
Snapper fed with defatted mealworm powder had a 30% higher survival rate than snapper fed with fishmeal alone.

The Sea Cucumber

Replacing fishmeal with 80% mealworm meal in diet can significantly enhance the health level of sea cucumber and promote the growth of sea cucumber.

Ornamental Fish

The mealworms powder can partially replace fishmeal, and the replacement content is 40%. Adding mealworm powder can improve the hematopoietic function and the disease resistance of fish body, significantly increase the survival rate.



MW2(キチン混合なし)-10%群で、生存率が有意に高い値を示した。
In the MW2(non-mixed)-10%Group, the survival rate was significantly higher.

The picture above shows the disease resistance experiment of defatted mealworm powder on fish conducted by Ehime University in Japan. The experimental effect is very obvious to prove that defatted mealworm powder can effectively improve the survival rate much more than fishmeal.

Some Questions About Defatted Mealworm Powder

1、 About The Defatted Mealworm Powder Microscopic Examination

Microscopic examination is the use of a microscope to observe the sample and then interpreting the sample composition based on experience or official micrographs. The micrograph is a summary of the experience of the feed industry over the years in the observation of conventional raw materials, and it is helpful in the judgment of conventional raw materials. However, insect protein is a new raw material, and in China currently does not have an official micrograph of The Defatted Mealworm Powder as well. Therefore, inspectors are very difficult to compare due to there is no recommended micrograph. Even if the comparison is made, depending on the experience of different inspectors, there may be different conclusions. So this method is not accurate.

The protein content of the mealworm larvae after microwave drying was relatively high. The standard of dry mealworm we recovered is

protein content $\geq 51\%$. After crushing and extracting of oil (which used for industrial oils and advanced transformers), the protein content of mealworm meal is higher, and the protein content standard of The Defatted Mealworm Powder is $\geq 65\%$, Usually at 68-70% in the analysis results . There may be several parts in the production process that are mistaken for impurities.

Investigating insect powder was mistaken for impurities as follows:

① mixed with a small amount of mealworm bug(pupa)wings, muscles and mealworm in-body feed residues.

② The setae and food residue of mealworm larvae.

③ Chitin extracted during production is not in the form of a chitin-protein complex.

The small-scale comparison experiments and trials are strongly recommended. Doing experiments and trials can also provide an intuitive understanding of the overall use data of The Defatted Mealworm Powder and also the effects of disease prevention during the rearing stage.

2、 About The Freshness of Defatted mealworm powder

Because the antimicrobial peptides and chitin contained of insects

are basic, we recommend testing histamine for the freshness of defatted mealworm powder.

3、 Import Customs Register

If it is your first time to purchase the defatted mealworm powder, we recommend that you should visit relevant custom departments to register the product. The product title can be applied according to your requirements, and we suggest 'Defatted Mealworm Powder'.

4、 Antioxidant Additions

Antioxidants that can be added include: ethoxyquinoline, BHA, and VE. The price shows ethoxyquinoline < BHA < VE. You can choose whether to add antioxidants according to your needs and the highest detection value of customs. We will add antioxidants according to your requests.

5、 How Much Defatted Mealworm Powder Can The Factory Produce Each Year?

Our factory currently produces over 30,000 tons of insect protein and 100,000 tons of yellow mealworm per year. And can expand breeding and production scale at any time. Therefore, it can meet the needs of customers worldwide.



6、 Where We Can Export At Present?

At present, our products have been sold and used in the United States, Europe, Latin America, Japan, South Korea, Southeast Asia, China Taiwan and many other regions.

7、 Product Packaging And Transportation

The current packaging is 25KG/ bag blank kraft paper bags, and 700KG/ ton bags. We can make self-adhesive shipping mark

according to your requirements. Products can be palletized with plywood fumigation-free pallet.

Container Transport:

20 feet container: 22 tons Max without pallets. 12 tons Max with pallets (1.5 tons/pallet, 8 pallets/ container)

40 feet container: 27 tons Max without pallets, 24 tons Max with pallets. Therefore, it is suggested that the unit price of 20-feet container without pallets is the lowest.



8、 Problems In mailing Samples Of The Defatted Mealworm Powder

Powdery items cannot be sent by international express from China. Therefore, if you need samples for testing, we will pressed mealworm powder into particles or blocks for mailing. The shape change is purely physical and will not affect the composition of the product itself. After you receive the sample, you can pulverize it for

testing or trial feeding.

9、 Test Report And Certificate

We can provide origin certificate and health certificate according to the requirements, the health certificate issued by Chinese customs mainly reflects salmonella, mold, total number of bacteria, and escherichia coli. Please inform us in advance if you need the test report from the other testing institutions, and we will try our best to provide you with the test files you need.

10、 Storage Conditions And Expiration Date

Ventilated dry storage, shelf life of 12 months, if well preserved, can be stored for 24 months.

11、 Delivery

After the contract signed, according to the shipping date and production situation, we ensure that all products are the latest production. The general delivery time is about 14 days.

If you have any other questions about our product, please contact us and we will give you a detailed explanation.