



Insect Menu

food with insects

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Insect fashion

Food for people

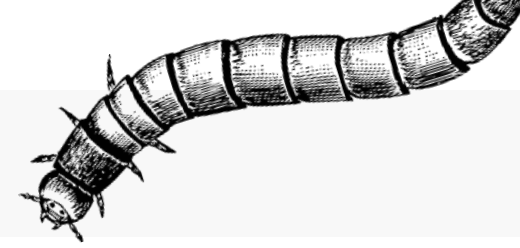
- 2,000 insects worldwide are considered edible
- In 124 countries they are part of the daily diet

Source of protein for animals

- Consumer animals
- Pets



Facts about insect farming

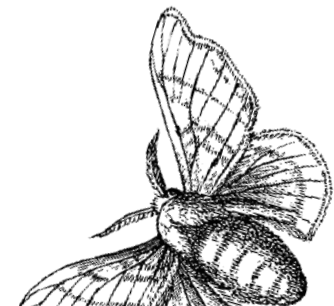
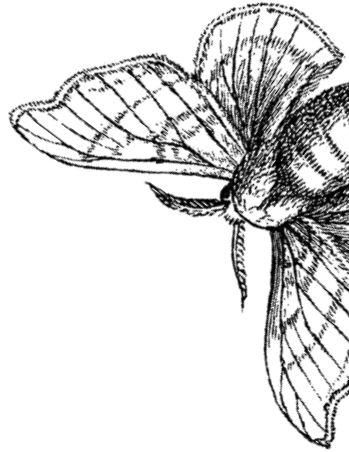


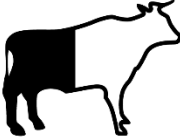
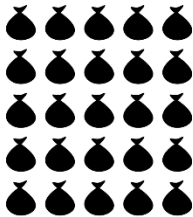

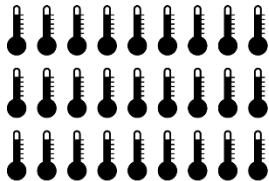




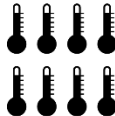











Production ecology

- needs less space
- uses less water
- needs less energy (!!!)
- emits fewer greenhouse gases
- can use waste and by-products from the agri-food industry (!!!)

Production economics

- high fertility
- rapid growth rate
- ability to live in density
- resistance to pathogens
- high bioconversion of feed (1 kg of protein from 2 kg of food)



Edible part [%]	Feed conversion ratio (feed [kg] / 1 kg protein)	Water footprint (water [l] / 1 kg of protein)	Greenhouse effect creation potential (CO ₂ -eq)	Land requirement (area [m ²] / 1 kg of protein)
40 	25 	112 	88 	201 
55 	9,1 	57 	27 	55 
55 	4,5 	34 	19 	47 
80 	2,1 	23 	14 	18 

Positive PR of insects – how to use it to boost sales?

Characteristics	Foods for dogs	Foods for fish
Natural dietary ingredient		✓
Source of protein	✓	✓
Help with allergies (monoprotein foods)	✓	
In line with the trend of vegetarianism and veganism	✓	?
Planet-friendly farming	✓	✓

Insect Menu - selling points



1.2 mm



0.5 mm



Insect Menu

the only food of its kind



Insect Menu - 45% insects

Black fly
(*Hermetia illucens*)



15%

Mealworm
(*Tenebrio molitor*)



15%

Silkworm
(*Bombyx mori*)



15%

- 3 species of insects
- animal protein exclusively from insect larvae and pupae
- increased immunity of fish

Insect Menu – 45% insects

Black fly

(*Hermetia illucens*)



defatted meal from larvae

10% protein and 55% fat

Ca, Mg, P

Mealworm

(*Tenebrio molitor*)



defatted meal from larvae

66% protein and 10% fat

Omega-3 and 6 fatty acids

Silkworm

(*Bombyx mori*)



defatted meal from pupae

74% protein and 7.5% fat

essential amino acids

Why doesn't Insect Menu have any competition?

Manufacturer 1

Product 1

- » 15% hermetia

Manufacturer 2

Product 1

- » 40% mealworm

Product 2

- » 4% hermetia

Product 3

- » 6% hermetia

Manufacturer 3

Product 1

- » 38% hermetia

Product 2

- » 30% hermetia

Product 3

- » 25% hermetia

Manufacturer 4

Product 1

- » 10% mealworm

- » 5% hermetia

Product 2

- » 28% hermetia

Manufacturer 5

Product 1

- » 5% housefly
- » 5% mosquito larvae
- » no fish

Insect Menu *boosts immunity*



AMP proteins - drugs of the future ????

- » discovered in the early 1980s in frogs and toads
- » there are about 1500 known AMP proteins, of which 150 have been isolated from insects
- » antimicrobial peptides have antibacterial and antifungal properties. They also show activity against some parasites and viruses



Chitin - a natural prebiotic

- » Chitin builds the external skeletons of arthropods, including insects. Chemically, chitin has a structure similar to cellulose. Therefore, it is considered an insoluble dietary fiber with potential prebiotic properties.
- » It promotes the growth of lactic acid bacteria.
- » It increases the biodiversity of the fish microbiome.



Insect Menu – summary

- **3 species of insects** providing a complete, nutritious dose of energy, protein and minerals for your fish
- **exclusively insect protein**, which stimulates fish growth and supports the biodiversity of their microbiome
- **increased fish immunity** thanks to prebiotic properties of insects
- **attractive flavor**, loved by fish
- **high digestibility** and **optimal phosphorus level** to ensure good quality of water
- **insects derived from environmentally friendly** farm which uses less space, water and energy and leaves a smaller carbon footprint



Thank you for your
attention!

