



Novel Food

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Introduction

Novel Food is defined as food that had not been consumed to a significant degree by humans in the EU before 15 May 1997, when the first Regulation on novel food came into force.

Novel food is important because from a nutritional point of view:

- More nutrients, because naturally more rich in fiber, vitamins and antioxidants that help the body stay healthy.
- Lighter, because cooked with simple and natural cooking techniques, to keep the nutrients of food intact and not weigh them down with cooked oils and condiments

The novelty in 'Novel Food' can be newly developed, innovative food, food produced using new technologies and production processes.



Novel food in the EU

The European Union's (EU's) Novel Foods Regulation (EC) No 258/97

The EU Novel Foods Regulation states that novel foods falling within scope MUST NOT:

- Present a danger to consumers
- Mislead consumers
- Differ from foods or food ingredients for which they are intended to replace to such an extent that their normal consumption would be nutritionally disadvantageous for the consumer



Typical values	100ml contains	250ml contains	%GDA*	Typical adult
Energy	199kJ 47kcal	500kJ 120kcal	6%	2000kcal
Protein	0.5g	1.3g		
Carbohydrate	10.5g	26.3g	29%	90g
of which sugars	10.5g	26.3g		70g
Fat	trace	trace		
of which saturates	trace	trace		
Fibre	trace	trace		
Sodium	trace	trace		
Salt equivalent	trace	trace		

* Guideline daily amounts

Vitamins/Minerals 100ml contains 25.0mg (42% RDA) 62.5mg (100% RDA)

List of main novel food categories

- Food products or food ingredients with a new or deliberately modified primary molecular structure;
- Food or food ingredients consisting of or isolated from microorganisms, mushroom or algae;
- Food products or food ingredients consisting of plants or food ingredients isolated from plants and food ingredients isolated from animals;
- Products and food ingredients subjected to a production process not generally used, which leads to significant changes in the composition or structure of the products or food ingredients in the nutritional value of their metabolism or in the content of undesirable substances.



Cultured Meat

Cultivated meat, also known as cultured meat, is genuine animal meat (including seafood and organ meats) that is produced by cultivating animal cells directly. This production method eliminates the need to raise and farm animals for food. Cultivated meat is made of the same cell types that can be arranged in the same or similar structure as animal tissues, thus replicating the sensory and nutritional profiles of conventional meat.



Cultured Meat

Advantages

- **It is more sustainable:** There is no doubt that lab grown meat is a more sustainable solution. From an environmental standpoint this means less water is used to produce meat, less methane gas is put into the atmosphere, and it's overall a much cleaner solution than factory farming.
- **The animals suffer less (or not at all):** It is true that you can create cultured meat from an animal that does not end up going to slaughter. However, the reality is that many of the animals that will be used for research and development purposes are probably animals that are on the slaughter lines anyways. With that being said, we can have a future where we are eating meat and no new animals will be killed for each bite we take.
- **It has less bacteria:** I'll wrap this one into the "there are no antibiotics" discussion. Since cultured meat, or for this purpose we will call it clean meat, has is grown in a sterile environment, there is little bacteria that is produced when producing the meat. This means that the meat that we eat will be free of many potential diseases. A lot of the antibiotics and drugs that are used to treat sick livestock animals will no longer be necessary.



Cultured Meat

Disadvantages



- **We are many years from producing large quantities:** Many of the companies that are pioneering the field, such as Mosa Meats, claim that we are still quite a few years out from creating cultured meat. Some of the companies are mentioning that 2020 or 2021 will be the year that they start producing cultured meat for the public. However, this is a vague statement and even by 2021 we are not sure what types of quantities will be released. Surely not even a fraction of the amount of meat such as beef or poultry produced from current animal agriculture.
- **It is very expensive to produce:** Right now, there are many companies in the research and development phases of creating cultured meat. This means that many dollars need to be spent before major advancements in the field occur. With that being said, consider that by the time the iPhone was released, about \$1 Billion of research and development had been put in. As of Summer 2018 we have less than \$100 Million invested into clean meat companies and about \$700 Million invested in Cellular Agriculture companies in general.
- **We don't know how to regulate it:** Another issue that we are currently facing is that we are not sure how to regulate it. In the United States, there are several organizations that are fighting over what it should be called, who tests for safety, and which governing body can regulate it. This could push development even farther back, especially if the meat and dairy industry want to push against it or if the animal welfare organizations don't make a strong enough case for the entire nation. Some organizations within the animal welfare movement don't even believe in the technology.

Nova Meat, Spain (cultured meat)

Reduce their consumption of animal meat is the fastest and most straightforward path towards saving the planet.

They are obsessed with making a positive impact on the well-being of our society and reestablishing the delicate balance with the natural world around us.

They built the technological platform to design and manufacture the best texturized alternative protein products, to shift away from intensive farming, overfishing and deforestation.



Nova Meat, Spain (cultured meat)

Biomimicry is our engine: In nature, the muscle of animal meat is made up of myofilaments, myofibrils, fibers, fascicles and fascia, which all are bound together by connective tissue. It is a complex structure which is what gives meat its distinct texture. With Nova Meats advanced technology we are able to incorporate hierarchical and anisotropic structures in our products which create fibers and microfibrils to mimic the fibrous texture and appearance of meat.

3D Printing: Their origins lie in 3D printing combined with tissue engineering expertise, through which we are able to create texturised whole-cuts. 3D printing provides us with an excellent tool for prototyping new products and formulations before scale up.

