



Organic Plant Protein

History, products and mission

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Organic Plant Protein A/S
is a new organic company
producing **meat analogues**
based on proteins from
pea and fava bean.



Our Mission is

- to support the important **reduction of meat-production** by developing and producing new **plantbased meat analogues**
 - texture like meat and a mild taste
 - acceptable price
- The new technology is only used for **organic production**
- To support the sustainable development goals



**SUSTAINABLE
DEVELOPMENT GOALS**

Organic
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Our background is organic farming and meat production

- **1980 – 2007** we were active in developing organic farming, especially focusing on **animal welfare** in pig production.
- In **1993** we founded the organic meat company **Hanegal A/S** focusing on:
 - Production without additives
 - Production without allergenes



Since 2015 Hanegal has been focusing on developing plantbased alternatives

- Hanegal developed a very successful vegan patê and several plantbased ready meals.
- *But it was difficult to develop good plantbased sausages, meat balls and burgers without additives and without allergenes like soya and gluten*
- *We needed new ingredients*



NEW INGREDIENTS

In **2018** we became aware, that **Danish Technological Institute** had developed a new technology for texturing of proteins from pea and fava bean:

- Very fine structure, very close to meat
- Mild taste
- Based on protein-concentrate produced by a clean mechanical proces (no chemistry, no isolates)
- Dry texturing without any additives
- Much lower energy-consumption than wet texturing based on protein isolates



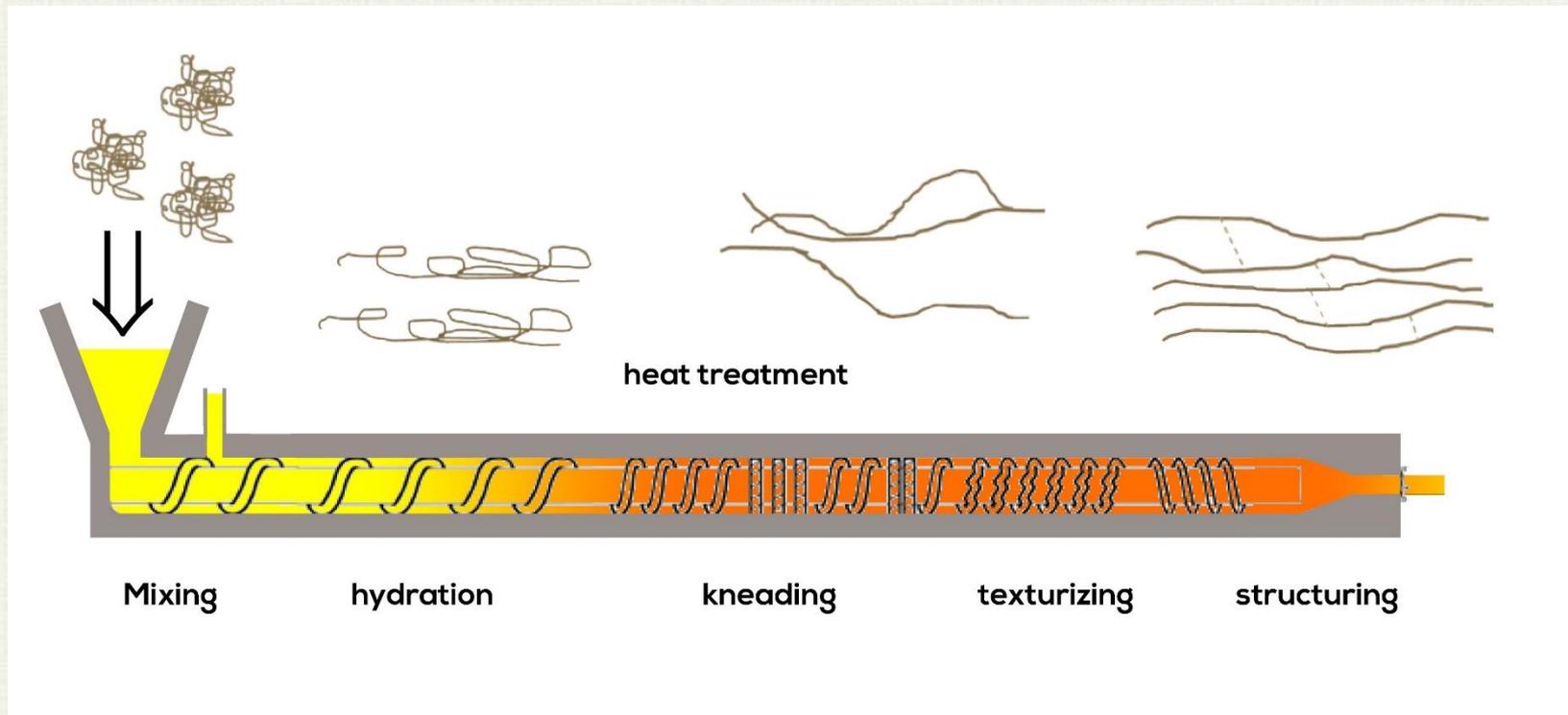
- In **2019** we sold the shares in the meat company *Hanegal* and founded **Organic Plant protein A/S**
- The technology from Danish Technological Institute was transferred by hiring the technical expert Per Lang Sørensen
- The new factory was ready for production february 2020

- **The heart in the production is an extruder.**
- It looks complicated and "highly processed", but in reality it is simple well known and clean processes:
 - Kneading
 - Heating
 - forming
- *Like baking bread and production of pasta*



The Process

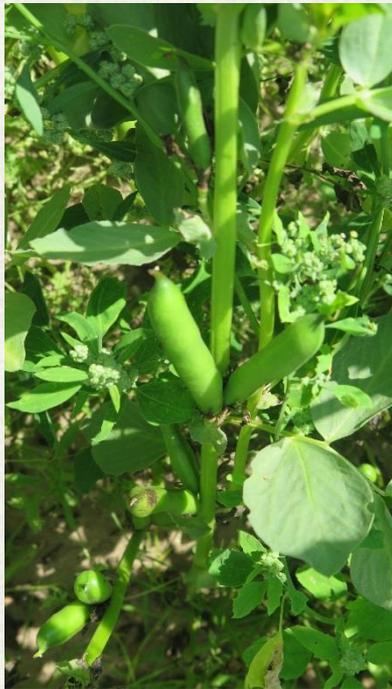
Dry texturing of Protein-concentrate from pea and fava bean, water (8%) and salt.



Raw material for the production

Protein concentrate from legumes:

- Pea
- Fava Bean



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Protein-concentrate

- The protein-concentrate is produced by ***Vestkorn*** in Norway.
- Normally Vestkorn will source most of the peas and fava beans in Latvia.
- From next year we are planning to source most of the peas and fava beans in Denmark.
- At full capacity we will need crops from 8000 Ha
- In Denmark we have 320.000 Ha with organic farming, and the farmers are ready to produce peas and fava beans
- Next step might be a factory for dry fractionation in Denmark

WIDE RANGE OF PRODUCTS

This is just a few examples:



- **Organic**
- **Soy free and gluten free**
- **No E-numbers**
- **Mild taste and good texture**
- **Price is close to meat**
- **Low climate impact: 0,9 kg CO2e/kg hydrated product**

Market possibilities



**Ingredients for
Food industry**



Food Service

PlantMate



Retail – Plant Mate or private label

Nutrition values of *Plant Mate*

Ingredients: 80% organic pea proteinconcentrate, 19% organic fava bean proteinconcentrate and salt

	DRY PRODUCT Pr. 100g	HYDRATED PRODUCT Pr. 100g
Energi	339 kcal	109 kcal
Fat	4,1 g	1,4 g
Carbohydrate	15 g	5,0 g
Dietary fiber	15 g	5,0 g
Protein	53 g	18 g

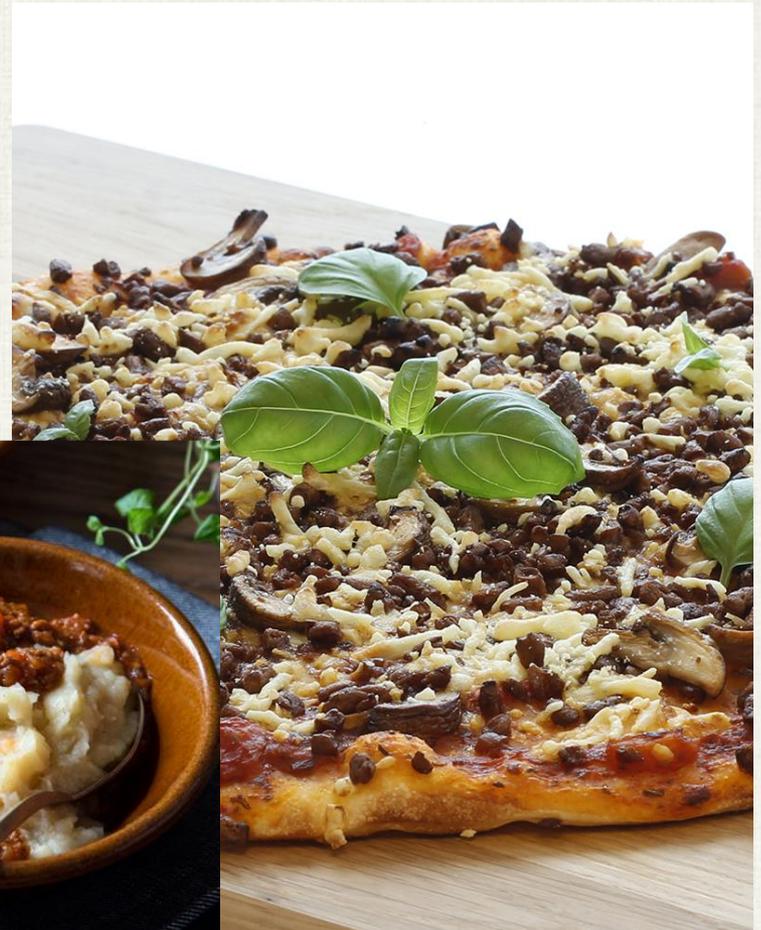
- *The high temperature in the extruder improves the digestability of the proteins from peas and fava beans*

Nutrition values of *Plant Mate* compared to meat and a cooked legume

	HYDRATED <i>PlantMate</i> Pr. 100 g	FRESH CHICKEN Pr. 100 g	COOKED LENTILS Pr. 100 g
Energy	109 kcal	134 kcal	136 kcal
Fat	1,4 g	6 g	0,4 g
Carbonhydrate	5 g	0 g	20 g
Nutritional fibre	5 g	0 g	8 g
Protein	18 g	20g	9 g

- ***PlantMate* can replace meat 1:1**
- **The same amount of cooked lentils supplies only half as much protein and 25% more energy.**

It is possible to produce delicious plantbased meals looking and tasting like the meals that people are used to eat



Climate impact of Plant Mate compared to other foods

PRODUCT	Kg CO2e/kg
Carrot, raw	0,25
Cabbage, raw	0,25
Potatoes, raw	0,36
PLANT MATE, hydrated	0,93
Oat flakes	0,95
Green lentils, dry	1,8
Chick peas, dry	2,2
Pork, minced	3,0
Chicken, minced	3,8
Beef, minced	34,5

- The climate impact of Plant Mate is calculated by Dr. Agro Henrik Saxe Mindful Food Solutions
- The calculation is based on the same principles and the same iLUC values as used in the new **Concito Climate Database**
- Be very careful, if you compare data from different sources.

More information and recipes

- www.plantmate.dk - in Danish and English
- www.organicplantprotein.dk – in English

