



**sprau**  
BEANFUL OF LIFE

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**WE AWAKEN THE BEAN.  
WE CAN AWAKEN A  
HEALTHIER PLANET  
TOGETHER, TOO.**



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## Introduction

We re-discovered an ancient crop, **faba bean**, also called fava bean or broad beans, that has been present in Finland for long time: cultivation dates back to the 7th century.

Faba bean is a legume plant which suits perfectly in crop rotation with cereals for a more **sustainable food production**. It has strong biological nitrogen fixation capability; it improves soil fertility, increases biodiversity; and hosts and feeds pollinating insects.

**Germination**, or sprouting, is a natural process by only adding water and controlling temperature and moisture. Germinated faba bean is the first ingredient of new brand **Sprau**® launched by Viking Malt Oy.



# Sprau<sup>®</sup> portfolio

- Gluten-free
- Soy free
- Additive free
- Non-GMO
- High in protein
- High in fiber
- Less FODMAPs

## Sprau<sup>®</sup> flour and split bean

Protein	32 %
Carbohydrates	41 %
Fiber	15 %
Moisture	7.2 %

## Sprau<sup>®</sup> protein

Protein	55 %
Carbohydrates	14 %
Fiber	19 %
Moisture	9.0 %

## Sprau<sup>®</sup> starch-rich flour

Protein	23 %
Carbohydrates	53 %
- Starch	50 %
Fiber	11 %
Moisture	9.1 %

# Benefits of Sprau<sup>®</sup> germinated faba bean

## Nutrition

- High in protein and fiber
- Less FODMAPs

## Flavour

- Pleasant flavor with roasted notes
- Significant reduction of lipoxygenase and lipase activity, the main cause of off-flavor development in pulses

## Functionality

- High protein water solubility
- Good techno-functionality
- Good for fermentation with released sugars and amino acids



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# Sprau<sup>®</sup> ingredients have been successfully tested in several plant-based dairy applications



**Milky drink**



**Creamy cooking product**



**High-protein fermented yoghurt**



**Fermented creamy spread**

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Plant-based dairy applications:

**Sprau<sup>®</sup> milky drinks**

# Milky drink with 2 % protein made from Sprau<sup>®</sup> starch-rich flour



## Ingredients:

Water, germinated faba bean starch-rich flour 9,7 % (gluten-free), rapeseed oil, calcium (carbonate and chloride), salt

- Soy free
- Gluten-free
- Source of protein

	per 100 g
Energy	178 kJ/42 kcal
Fat	1,5 g
of which saturated	0,1 g
Carbohydrates	5,1 g
of which sugar	4,4 g
Protein	2,0 g
Salt	0,07 g

# Milky drink recipe

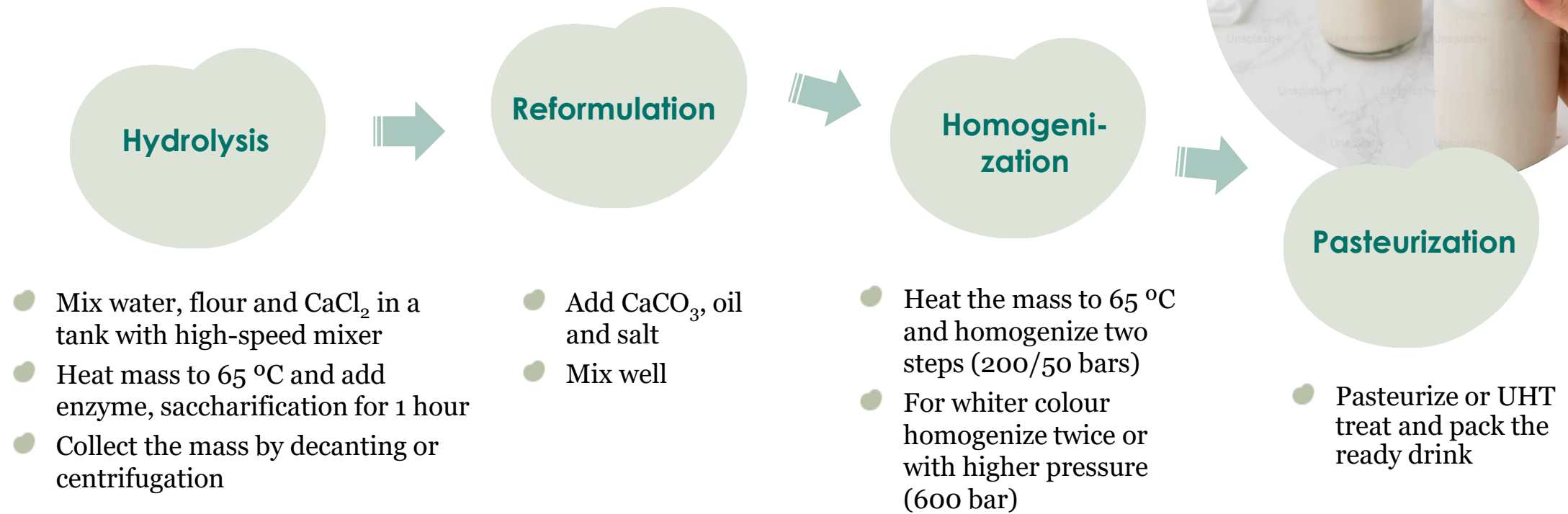
Good foaming properties for barista-type beverage



- Use stabilizer, like gellan gum, for improved mouthfeel and stability
- Use calcium carbonate for whiter colour
- For even more neutral taste use masking agent or natural flavoring

	Hydrolysis (Enzymatic treatment)	Reformulation
Sprau® starch-rich flour	9,7 %	
Water	90 %	
Enzyme	0,15 %	
CaCl <sub>2</sub>	0,01 %	
Base	100 %	98,2 %
Rapeseed oil		1,5 %
Salt		0,05 %
CaCO <sub>3</sub>		0,3 %
Total		100 %
pH		7,2
Brix		10,5

# Process uses standard manufacturing equipment



# Milky drinks can be made from all Sprau<sup>®</sup> ingredients



**Starch-rich flour is an excellent choice for plant-based milky drink applications**

	Milky drink with Sprau <sup>®</sup> flour	Milky drink with Sprau <sup>®</sup> protein	Milky drink with Sprau <sup>®</sup> starch-rich flour
	Protein 2,0 %	Protein 2,5 %	Protein 2,0 %
<b>Sprau<sup>®</sup> ingredient</b>	7,2 %	5,5 %	9,7 %
<b>Sensory profile</b>	Medium sweetness and medium-bodied	Low sweetness, light-bodied, more mouthfeel can be achieved with stabilizers	Sweet, full bodied
<b>Benefits</b>	Balanced nutritional composition from whole bean	Most protein with lowest flour dosage	Most balanced taste with pleasant mouthfeel

# Comparison of plant-based milks

Plant-based milk type	Energy kJ / 100 g	Energy kcal / 100 g	Fat g / 100 g	Carbo- hydrates g / 100 g	- Of which sugar g / 100 g	Fiber g / 100 g	Protein g / 100 g	Salt g / 100 g	Amount of grain/pulse ingredient %	Nutritional composition of the product
<b>Sprau<sup>®</sup> milky drink</b>	178	42	1.5	5.1	4.4	-	2.0	0.1	9.7	<i>Source of protein</i>
<b>Drink with Sprau<sup>®</sup> and oat 50:50</b>	176	42	1.3	6.1	3.4	0.4	1.4	0.1	10.1	<i>Source of protein, balanced amino acid composition</i>
Oat*	174	42	1.1	7.0	2.3	0.7	0.8	0.1	10.5	<i>Source of fiber</i>
Rice*	206	49	1.0	9.9	4.7	-	0.2	0.1	12.5	<i>Low in protein and fiber</i>
Almond*	65	16	1.2	0.7	0.7	-	0.4	0.1	2.0	<i>Low in protein and fiber</i>
Soy*	155	37	1.9	1.6	1.5	1.5	3.3	0.1	7.8	<i>High in protein and fiber</i>

\* Average of selected 4 commercial products

# Sprau® can be combined with oat or malt milky drink base for tasty beverages



**Sprau® milky drink 50 %**

**Oat or malt milk 50 %**

**+ flavoring ingredients  
+ sugar**

- **Balanced amino acid composition**
- **Balanced flavor profile**
- **Faba bean supports healthy crop rotation**

# Sprau® milky drink is a great base for creamy cooking product

## Creamy cooking product

**Sprau® milky drink** 80 %

**Vegetable oil** 20 %

**Sensory profile** Balanced, creamy, pleasant mouthfeel



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Plant-based dairy applications:

**Fermented Sprau<sup>®</sup> yoghurt**

# High-protein fermented yoghurt made from Sprau<sup>®</sup> protein



## Ingredients:

Water, germinated faba bean protein 8,6 % (gluten-free), rapeseed oil, sugar, starter culture

- High in protein
- Source of fiber
- Additive free
- Soy free
- Gluten-free

	per 100 g
Energy	227 kJ/54 kcal
Fat	1,8 g
of which saturated	0,1 g
Carbohydrates	4,0 g
of which sugar	1,8 g
Fiber	1,5 g
Protein	4,7 g
Salt	<0,01 g

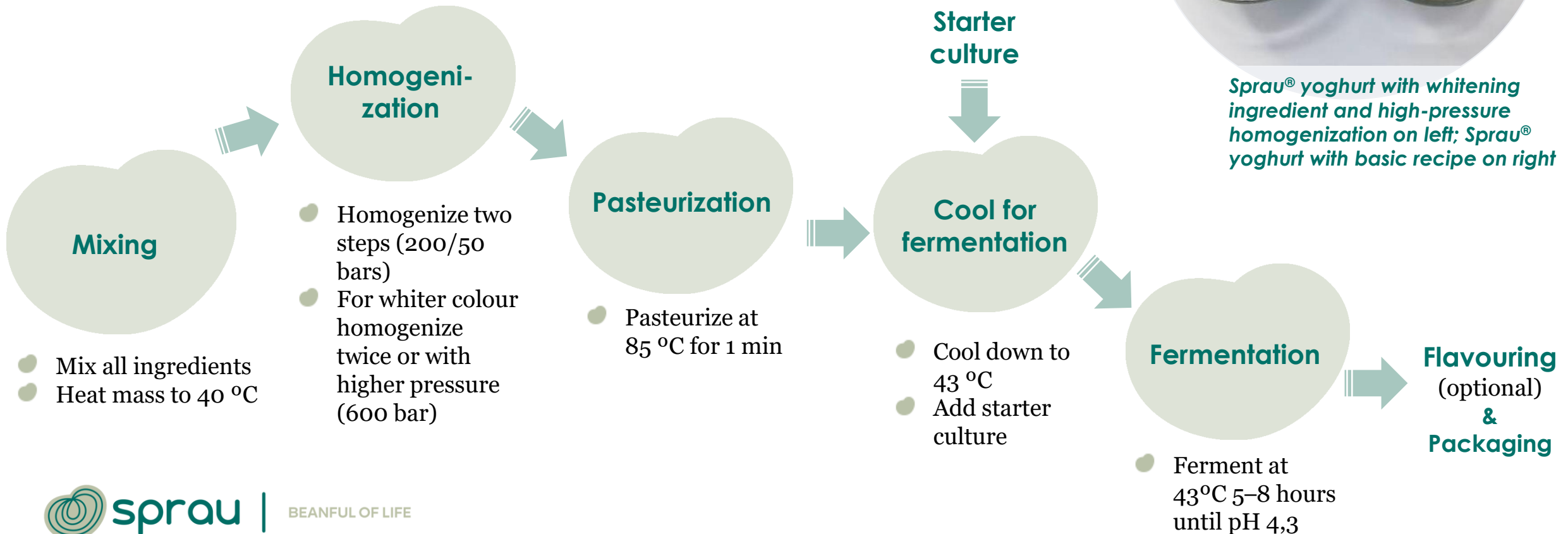
# High-protein fermented yoghurt recipes with Sprau<sup>®</sup> ingredients



	Sprau <sup>®</sup> flour	Sprau <sup>®</sup> protein
	Protein 3,0 %	Protein 4,7 %
Sprau <sup>®</sup> ingredient	8,6 %	8,6 %
Rapeseed oil	1,5 %	1,5 %
Sugar	1,5 %	1,5 %
Starter culture		
Water	88,4 %	88,4 %
Total	100 %	100 %

**Protein levels  
comparable to  
similar dairy  
products**

# Sprau<sup>®</sup> yoghurt process and steps for improved colour and texture



# Comparison of Sprau<sup>®</sup> high-protein fermented yoghurts



*Sprau<sup>®</sup> protein brings velvety and smooth mouthfeel to plant-based yoghurt applications*

	Yoghurt with Sprau <sup>®</sup> flour Protein 3,0 %	Yoghurt with Sprau <sup>®</sup> protein Protein 4,7 %
<b>Sprau<sup>®</sup> ingredient</b>	8,6 %	8,6 %
<b>Sensory profile</b>	<ul style="list-style-type: none"> <li>• Pleasant thick texture</li> <li>• Slightly acid taste</li> <li>• Mild beaniness</li> </ul>	<ul style="list-style-type: none"> <li>• Smooth and velvety texture</li> <li>• Very mild taste</li> <li>• Slightly astringent</li> </ul>
<b>Benefits</b>	Balanced nutritional composition from whole bean	Higher protein with velvety texture

# Comparison of plant-based yoghurts

Plant-based yoghurt type	Energy	Energy	Fat	Carbo- hydrates	- Of which sugar	Fiber	Protein	Salt	Nutritional composition of the product
	<b>kJ / 100 g</b>	<b>kcal / 100 g</b>	<b>g / 100 g</b>	<b>g / 100 g</b>	<b>g / 100 g</b>	<b>g / 100 g</b>	<b>g / 100 g</b>	<b>g / 100 g</b>	
Sprau® yoghurt	227	54	1.8	4.0	1.8	1.5	4.7	<0.01	<b>High in protein, Source of fiber</b>
Oat*	307	73	2.9	10.1	3.8	0.9	1.3	0.1	<b>Low in protein</b>
Cashew*	366	87	7.7	6.8	0.9	0.6	2.8	0.1	<b>Source of protein</b>
Soy*	221	53	2.5	2.4	1.5	1.8	4.5	0.1	<b>High in protein Rich in fiber</b>

\* Average of selected 4 commercial products

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Plant-based dairy applications:

**Fermented cheesy  
applications with Sprau®**

# Sprau<sup>®</sup> fermented creamy spread with 5 % protein



## Ingredients:

Water, germinated faba bean protein and starch-rich flour 10,8 % (gluten-free), rapeseed and coconut oil, sugar, salt, starter culture

- Additive free
- Soy free
- Gluten-free
- Creamy mouthfeel
- Clean label
- Protein level comparable to similar dairy products

	per 100 g
Energy	1050 kJ/249 kcal
Fat	23 g
of which saturated	7,6 g
Carbohydrates	7,2 g
of which sugar	2,1 g
Fiber	1,4 g
Protein	5,2 g
Salt	0,64 g

# Sprau<sup>®</sup> fermented creamy spread recipe

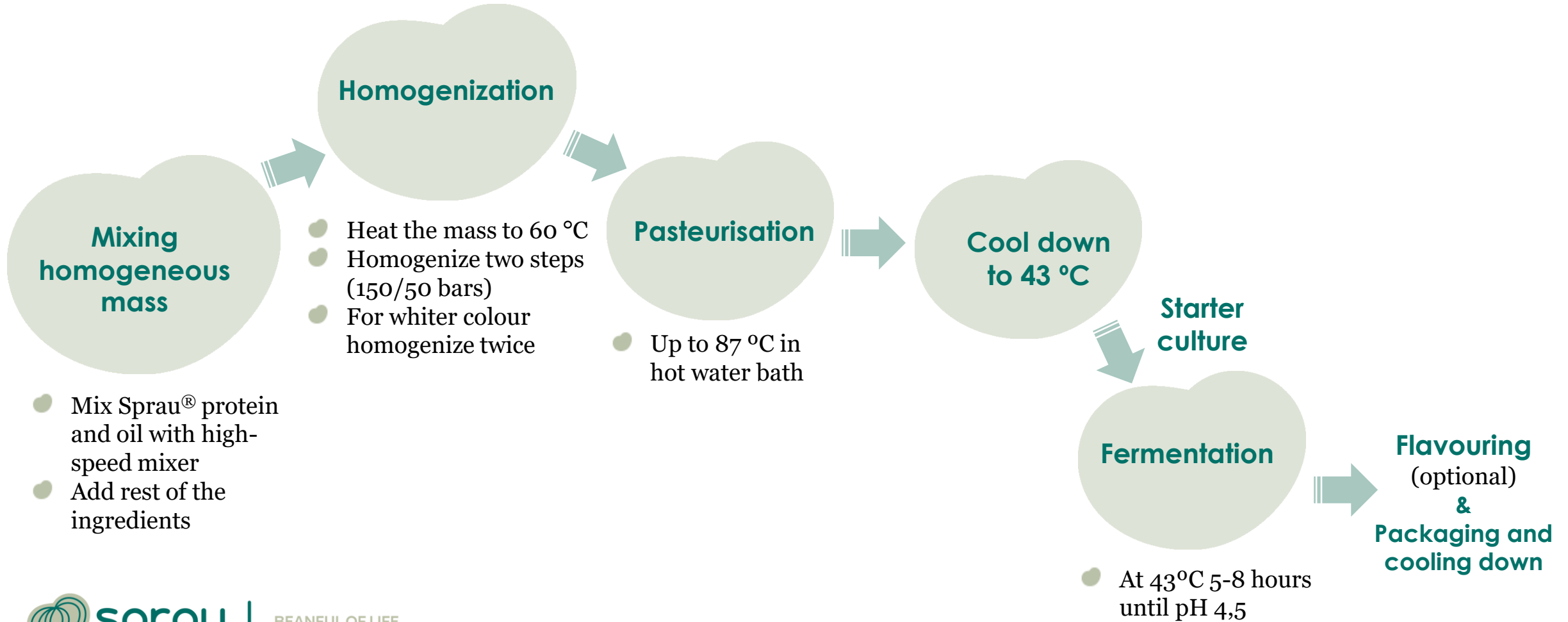
*Plant-based cream cheese can be made without additives using Sprau<sup>®</sup> starch-rich flour as a stabilizer*



- Heat-stable for cooking and baking
- Starch-rich flour functions as an excellent stabilizer

Sprau <sup>®</sup> protein concentrate	8,8 %
Rapeseed oil	15 %
Coconut oil	8 %
Water	63,6 %
Sprau <sup>®</sup> starch-rich flour	2 %
Sugar	2 %
Salt	0,6 %
Starter culture	
Total	100 %

# Fermented Sprau<sup>®</sup> creamy spread process



# Comparison of Sprau® ingredients in fermented creamy spreads



*Sprau® protein brings creamy and smooth mouthfeel to creamy cheese-type applications*

	Creamy spread with Sprau® protein and Sprau® starch-rich flour	Creamy spread with Sprau® protein and commercial starch	Creamy spread with Sprau® flour
<b>Sprau® ingredient</b>	8,8 %	8,8 %	8,8 %
<b>Starch addition</b>	2,0 %	2,0 %	0 %
<b>Sensory profile</b>	Fresh, creamy, smooth cutting surface	Smooth, shiny, rough cutting surface	Thick structure but not stable
<b>Benefits</b>	Most creamy mouthfeel, close to dairy	A rich and balanced mouthfeel	Better nutritional value from whole bean

# Comparison of plant-based cream cheeses

Plant-based cheese type	Energy	Energy	Fat	- Of which saturated	Carbo- hydrates	- Of which sugar	Fiber	Protein	Salt	Nutritional composition of the product
	kJ / 100 g	kcal / 100 g	g / 100 g	g / 100 g (% of total fat)	g / 100 g	g / 100 g	g / 100 g	g / 100 g	g / 100 g	
Creamy spread based on Sprau®	1050	249	23	7.6 (33 %)	7.2	2.1	1.4	5.2	0.64	<ul style="list-style-type: none"> <li>• Less saturated fat</li> <li>• Protein level comparable to similar dairy products</li> </ul>
Average plant-based "cream cheese"	1028	246	22.5	12 (55 %)	7.9	1.9	1.8	4.2	1.2	
Dairy cream cheese	981	234	23	15 (65 %)	3,2	3,2	0	5.2	1,0	

## Plant-based "cream cheese" category overview:

- The main ingredients are usually vegetable fats with high level of saturated fatty acids
- Many additives and stabilizers are used in the recipes
- Aromas are used to improve flavor profile

**Sprau® is a great fit for clean label fermented creamy spreads**

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**Sprau<sup>®</sup> products  
provide endless possibilities for  
your nutritious plant-based  
variations**

# Sprau<sup>®</sup> coconut pudding with 5 % protein



- Additive free
- Soy free
- Gluten-free
- Source of fiber
- Smooth and jelly mouthfeel without gelatin

## Ingredients:

Coconut milk (87 %), germinated faba bean flour 11 % (gluten-free), sugar (2 %), lemon juice, vanilla

## Instructions:

Mix ingredients and heat to 90°C.  
Cook for 5 minutes. Pack and cool down.

	per 100 g
Energy	965 kJ/233 kcal
Fat	18 g
of which saturated	16 g
Carbohydrates	10 g
of which sugar	4,9 g
Fiber	2 g
Protein	5,5 g
Salt	0,04 g

# Sprau<sup>®</sup> protein smoothies



- Additive free
- Soy free
- Gluten-free
- Source of protein

	Smoothie with Sprau <sup>®</sup> flour	Smoothie with Sprau <sup>®</sup> protein
	Protein 2 %	Protein 3 %
Sprau <sup>®</sup> product	5,8 %	5,5 %
Apple juice	74,2 %	54,5 %
Orange juice	20 %	20 %
Mango puree		20 %

- Sprau<sup>®</sup> flour gives texture for smoothie without additional fruit purees and stabilizers
- With Sprau<sup>®</sup> protein additional fruit purees are needed for thicker texture
- Both Sprau<sup>®</sup> ingredients bring 1 % fiber in smoothie

# Sprau<sup>®</sup> ingredients are suitable for milky drinks, creamy cooking and protein-rich spoonable snacks

- Mild and neutral in taste
- Rich in highly digestible protein
- Easy to reach protein level comparable to similar dairy products
- Sugars and free amino acids for fermentation
- Less FODMAPs
- Non-GMO
- Taste synergy with other plant-based ingredients
- Good foaming, gelling and emulsifying and stabilizing properties





## WE'RE MEANT TO BEAN

Have an idea or just wish to make innovative, sustainable food? Sprau® can be your ally! We're always looking for partners in making food choices healthier, and future brighter.

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