STARCH EUROPE

THE EU STARCH INDUSTRY

INTRODUCTION

DECEMBER 2020

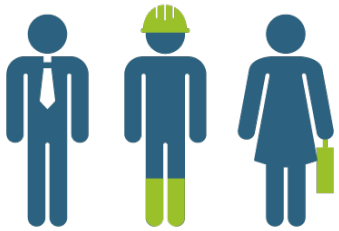
STARCH EUROPE
PLANT-BASED SOLUTIONS

STARCH EUROPE MEMBERS

EUROPEAN STARCH INDUSTRY FIGURES

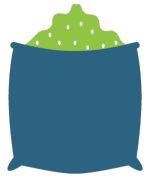
75 PLANTS

24M TONNES
EU RAW MATERIALS



15.000
JOBS

60.000
FARMERS



5M Tonnes
Native & Modified Starches

6M Tonnes
Starch Derivatives

> 5M Tonnes
Proteins & Fibres

FOOD
> 6M Tonnes

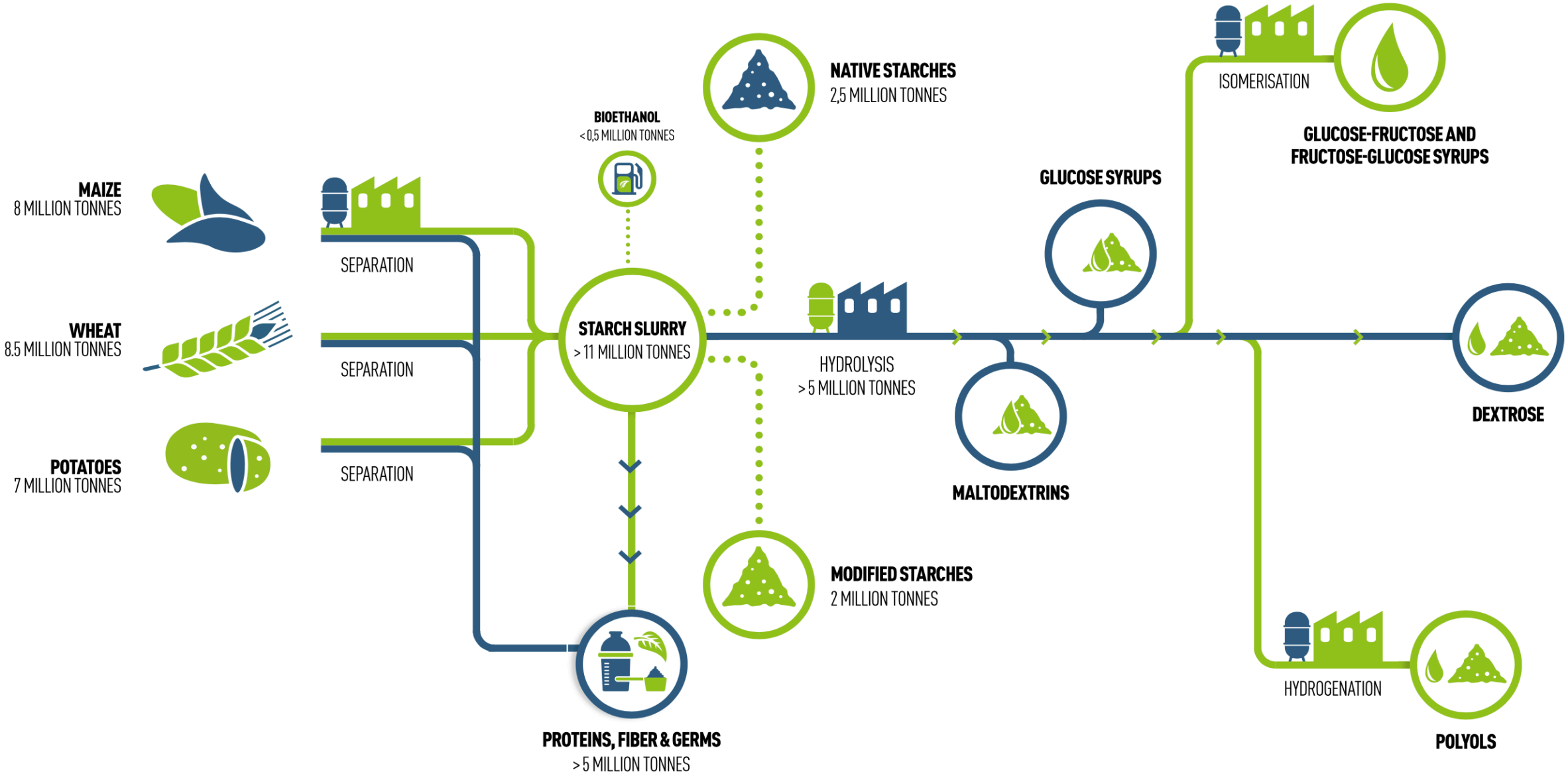
FEED
5M Tonnes

NON-FOOD
> 4.5M Tonnes

FUEL
< 0.5M Tonnes

STARCHEUROPE
PLANT-BASED SOLUTIONS

STARCH PRODUCTION PROCESS



INGREDIENTS FOR THE FOOD & DRINK INDUSTRY

INGREDIENTS FOR FOOD & DRINK
NATIVE STARCHES

- Native starches are carbohydrates, derived in the EU mainly from wheat, maize or potatoes.
- They are insoluble in cold water or alcohol
- Used widely in Food, primarily for binding and thickening purposes
- Lighter than flour and often gluten free

EX.: THAÏ SOUP

INGREDIENTS

- Shallots
- Tamarin
- Coconut Cream
- Yellow Curry Paste
- Almond flakes
- Ginger
- Grilled red bell pepper
- Garlic
- **NATIVE MAIZE STARCH**
- Vegetable Stock
- Sugar
- Curcuma

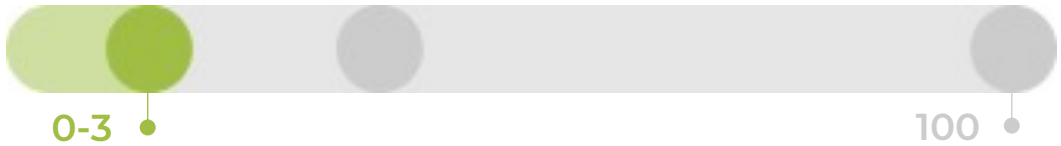
BENEFITS OF USE

- Creamier texture
- Preservation of the texture regardless of storage (cold, frozen, room temperature)
- Clean Label

RECIPE EXAMPLE PROVIDED BY USIPA

4 kcal/g

DEXTROSE EQUIVALENT (DE)



INGREDIENTS FOR FOOD & DRINK
MODIFIED STARCHES

- Modified starches are plant-based ingredients/additives, derived in the EU mainly from wheat, maize or potatoes.
- Modified starches provide an answer to the constraints of modern food technology and improve consumers experience with stable, healthy convenience food.
- Twelve modified starches are authorised as food additives in the EU.

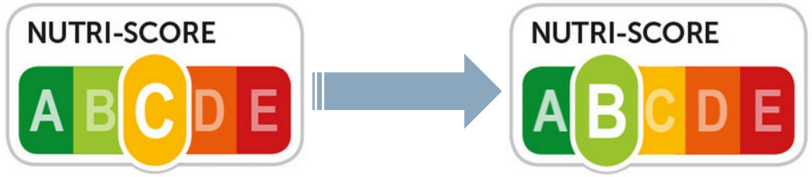
EX.: FERMENTED MILK

INGREDIENTS

- Skimmed Milk
- Cream 35%
- Sugar
- Skimmed Milk Powder
- **MODIFIED STARCH**
- Milk Ferments

BENEFITS OF USE

- Plant-based gelatine replacement
- Vegan-/Vegetarian-friendly
- Allow fat reduction ≤50% without compromise on taste, texture and visual appearance
- Reduction of caloric value ≤ 12%



RECIPE EXAMPLE PROVIDED BY USIPA

STARCHEUROPE
PLANT-BASED SOLUTIONS

INGREDIENTS FOR FOOD & DRINK
MALTODEXTRINS

- Maltodextrins are plant-based ingredients (carbohydrates), derived in the EU mainly from wheat, maize or potatoes.
- Maltodextrins are widely used in food formulations and have been for almost half a century.
- Low level of sweetness, are soluble, and have texturizing, gelling, emulsifying, non-crystallizing properties.
- Excellent source of energy for all, including babies and athletes, as they are easily digested.

4 kcal/g

DEXTROSE EQUIVALENT (DE)

EX.: SPORTS DRINK

INGREDIENTS

- Water
- **MALTODEXTRINS**
- Aroma
- Salt
- Stevia
- Acidity Adjusting Agent
- Preservatives
- Gelling Agent

BENEFITS OF USE

- Provides the needed level of glucose
- Facilitates hydration during exercise
- Better glucose absorption

RECIPE EXAMPLE PROVIDED BY USIPA

INGREDIENTS FOR FOOD & DRINK

STARCH-BASED SUGARS

- Glucose Syrups, Dextrose, Glucose-Fructose Syrups and Fructose-Glucose Syrups are plant-based ingredients used in food.
- They are sugars from the carbohydrates family, derived in the EU mainly from wheat or maize.
- Glucose Syrups play a vital role in bakery products (such as pastries, macaroons, cakes…) and confectionery products (such as sweets, gums, jellies…).
- Dextrose (pure Glucose) is also less sweet than sucrose and used widely in deserts and jams.
- Glucose-Fructose Syrups and Fructose-Glucose Syrups are liquid sweeteners, comparable in sweetness to sucrose and widely used as an alternative to sucrose in soft drinks and ice creams.

EX.: MACAROONS

INGREDIENTS

- Almond Powder
- Sugar
- Water
- Egg White
- **GLUCOSE SYRUP**
- Food Colouring (optional)

BENEFITS OF USE

- Heightens the fruit taste
- Texture remains moist – doesn't dry out
- Complements other sugars
- Clean Label

RECIPE EXAMPLE PROVIDED BY USIPA

INGREDIENTS FOR FOOD & DRINK
POLYOLS

SORBITOL, MANNITOL, ERYTHRITOL, MALTITOL…

- Polyols are made from maize or wheat.
- Polyols have been used for decades in confectionery as a sugar replacer or sugar-free sweetener
- Polyols contain fewer calories than table sugar or starch-based sugars like glucose-syrup and glucose-fructose syrup:
  - the caloric value of all polyols is 2,4 kcal/g except erythritol which has 0 kcal/g.
- Polyols do not promote tooth decay, because they are only lightly fermented by oral bacteria, preventing a pH drop in the mouth.
- Because of their low caloric and low glycemic value, polyols help consumers to reach a healthier blood glucose level and prevent weight gain.
- Polyols are also widely used in toothpaste and medicines.

EX.: STRAWBERRRY GINGER TRUFFLES

INGREDIENTS

- Whipping cream
- Strawberry paste
- Ground ginger
- **SORBITOL**
- DEXTROSE
- GLUCOSE
- Butter
- Dark chocolate (36% cocoa butter)

BENEFITS OF USE

- Low Caloric Value
- Sugar Free
- Low Glycemic Value
- No tooth decay

INGREDIENTS FOR FOOD & DRINK
PLANT-BASED PROTEINS

- When extracting starch from maize, wheat, potatoes, peas, barley or rice, the remaining plant-based matter is a combination of protein and fibres.
- With the rise in plant-based diets vegetable proteins are increasingly used as a complement, or an alternative, animal proteins.
- Wheat gluten is also used widely in the bakery industry to give texture to breads, cakes and pastries.

EX.: VEGETARIAN CURRY

INGREDIENTS

- **WHEAT PROTEINS**
- Chick Peas (whole and flour)
- Water
- Sunflower Oil
- **WHEAT FIBRES**
- Salt
- Natural Flavourings

BENEFITS OF USE

- Helps the diversification of protein sources
- Vegan/Vegetarian Friendly
- Clean Label

RECIPE EXAMPLE PROVIDED BY USIPA

4 kcal/g

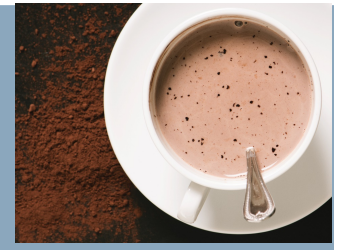
NUTRI-SCORE A B C D E

INGREDIENTS FOR FOOD & DRINK
FIBRES

- The fibres which remain when extracting starch from maize, wheat, potatoes, peas, barley or rice, have many uses
- Provide solutions in product reformulation
- Two main types: soluble and insoluble.
  - *Soluble fibres, including resistant starches* slow the digestion and absorption of dietary carbohydrates which can help prevent the rapid rise of blood glucose after eating. Because of the way some soluble fibres are fermented in the body, they can help you feel full.
  - *Insoluble fibres*, instead, do not dissolve in water but pass through the digestive system relatively intact.

EX.: HOT CHOCOLATE

INGREDIENTS



- **SOLUBLE MAIZE OR WHEAT FIBRES**
- Sugar
- Cocoa

BENEFITS OF USE

- Allows for ≤25% Sugar Reduction
- Highly digestible
- Preserves taste and texture
- Nutritional profile Rich in Fibres
- Helps lower blood cholesterol and glucose levels

RECIPE EXAMPLE PROVIDED BY USIPA

NUTRITION LABELLING

LABELLING

- Ingredients List:
  - Starch based sugars (glucose syrups, glucose-fructose syrups, fructose-glucose syrups and dextrose) must use their legal designation as detailed in the EU sugars directive (2001/111/EC).
  - Modified starches can be labelled either as 'modified starch' or by their e-number.
  - Other ingredients will be listed under their customary name (e.g maltodextrin, potato starch, pea protein, wheat gluten, soluble maize protein, sorbitol, etc)

- Nutrition facts on carbohydrates, including starch and sugars, will be listed on the nutrition table. Sugar content is indicated as a subsection of carbohydrates. Nutrition facts on fibres and proteins, will also be included in the nutrition table under their respective category.

Ingredients (Soft Almond Cake)

Candied orange peel 27% (Orange peel, **Glucose-Fructose Syrup**, Sugar, Natural Flavourings, Acidity Regulator: Citric Acid, Preservative: Sulphur Dioxide), Sugar, Wheat Flour, Almond 18%, Lemon peel (Lemon peel, **Glucose-Fructose Syrup**, Sugar, Natural Flavourings, Acidity Regulator: Citric Acid, Preservative: Sulphur Dioxide), Candied Citron 5% (Citron peel, **Glucose-Fructose Syrup**, Sugar, Natural Flavourings, Acidity Regulator: Citric Acid, Preservative: Sulphur Dioxide), Flowerhoney, Spices (Cinnamon 0,15% and Nutmeg), Hosts of Starch (**Potato starch**, Olive oil), Natural flavour (Vanilla). *Ingredients icing sugar*: Sugar, **Corn Starch**.

NUTRITION FACTS	100 g
Energy - Energie	1638 kJ 389 kcal
Fat - Matières Grasses	9,8 g
Of which Saturated Fats - Dont acides gras saturés	1,2 g
Carbohydrates - Glucides	67,0 g
Of which Sugars - Dont sucres	48,0 g
Protein - Protéines	6,5 g
Fibre - Fibres	9,9 g
Salt- Sel	0,25 g

NUTRITIONAL CLAIMS
PLANT-BASED PROTEINS AND FIBRES

NUTRITIONAL CLAIMS : WHEN CAN WE SAY “Rich in Fibres” or “Source of Fibres”, “Source of Proteins” or “High Proteins” ?

REMINDER OF REGULATION EC1924/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on nutrition and health claims made on foods

SOURCE OF FIBRE

For a product to claim to be “SOURCE OF FIBER” it must contain:

>3g

fibres per 100g or at least 1,5g fibres per 100 kcal.

HIGH FIBRE

For the ”HIGH FIBRE” claim, the food product must contain:

>6g

fibres per 100 g or at least 3g of fibres per 100 kcal.

SOURCE OF PROTEINS

For the “SOURCE OF PROTEIN” claim, the product must contain:

>12%

of the energy value of a food is provided by protein

HIGH PROTEINS

For the “HIGH PROTEINS” claim, the product must contain:

>20%

of the energy value of a food is provided by protein

MORE INFORMATION
WHERE TO FIND US ONLINE

AVENUE DES ARTS 43 | B-1040 BRUSSELS | BELGIUM

+32 2 289 67 60

WWW.STARCH.EU | WWW.STARCHINFOOD.EU