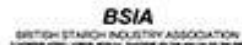


Isoglucose: the past, present, and future

**Market observatory on sugar and isoglucose
Brussels, 12 April 2018**

Starch Europe members



Economic contribution

27
Companies
2017

77
Plants
2017

€7,6
billion

Total annual turnover
2016

€421
million

Averaged Capitalised
Investments
2014-2016

€81
million

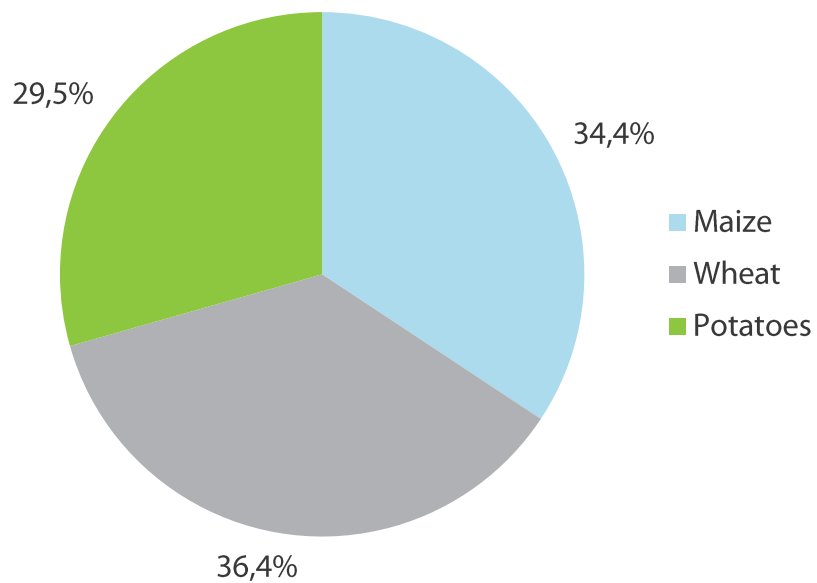
Average Investments in Research
& Development
2014-2016

15.195
direct jobs
2016

100.000
indirect jobs
Estimate

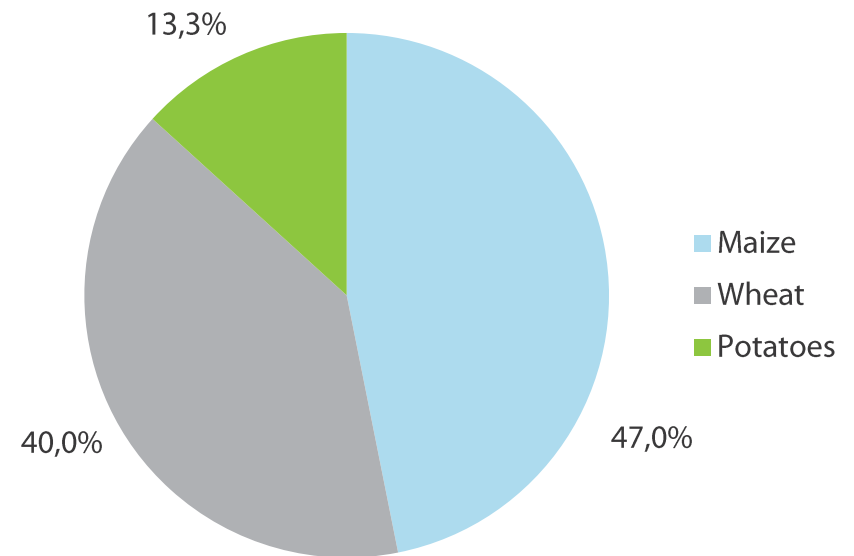
Raw materials and starch production in the EU

Processed raw materials



Total : 23,6 Mio tonnes

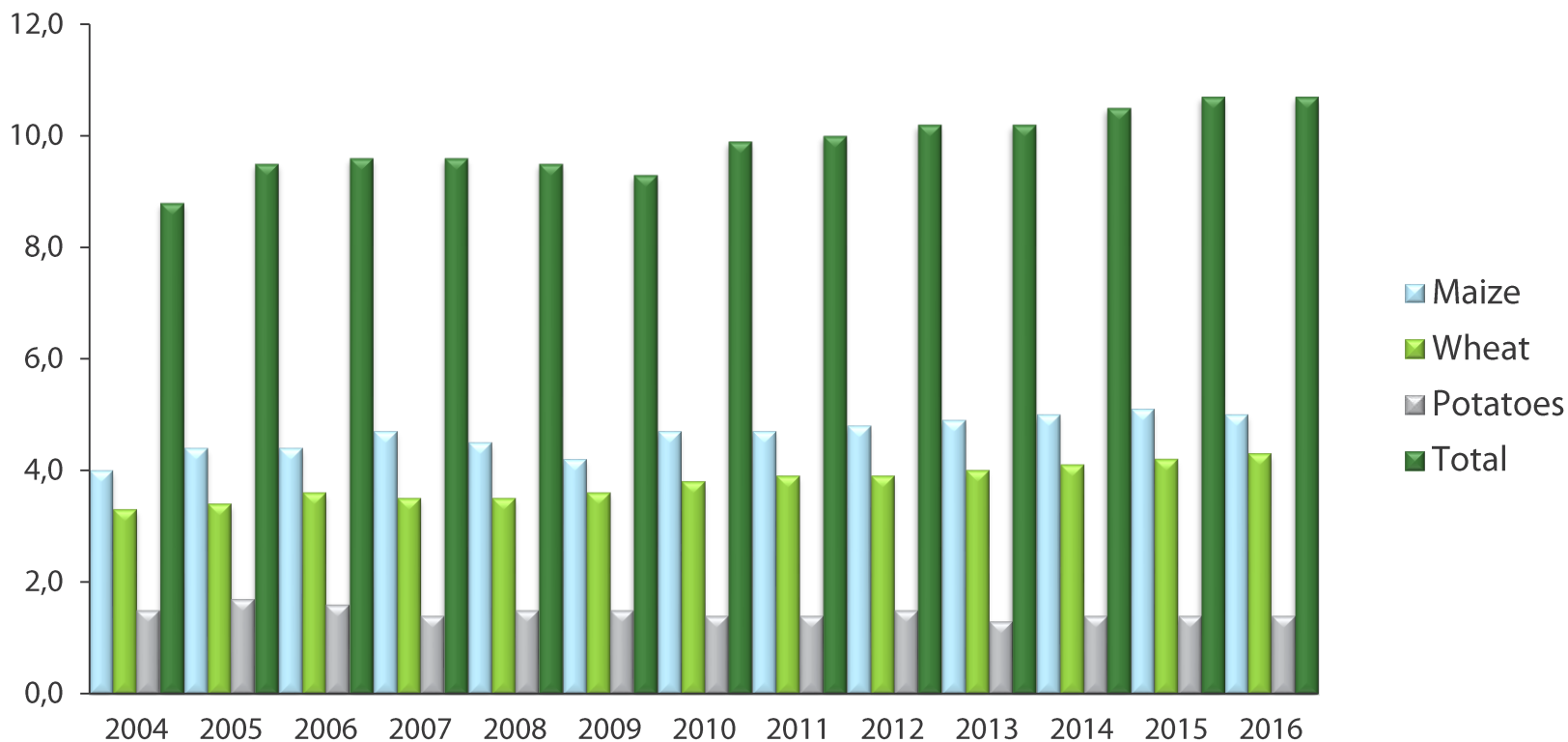
Starch products in starch equivalent



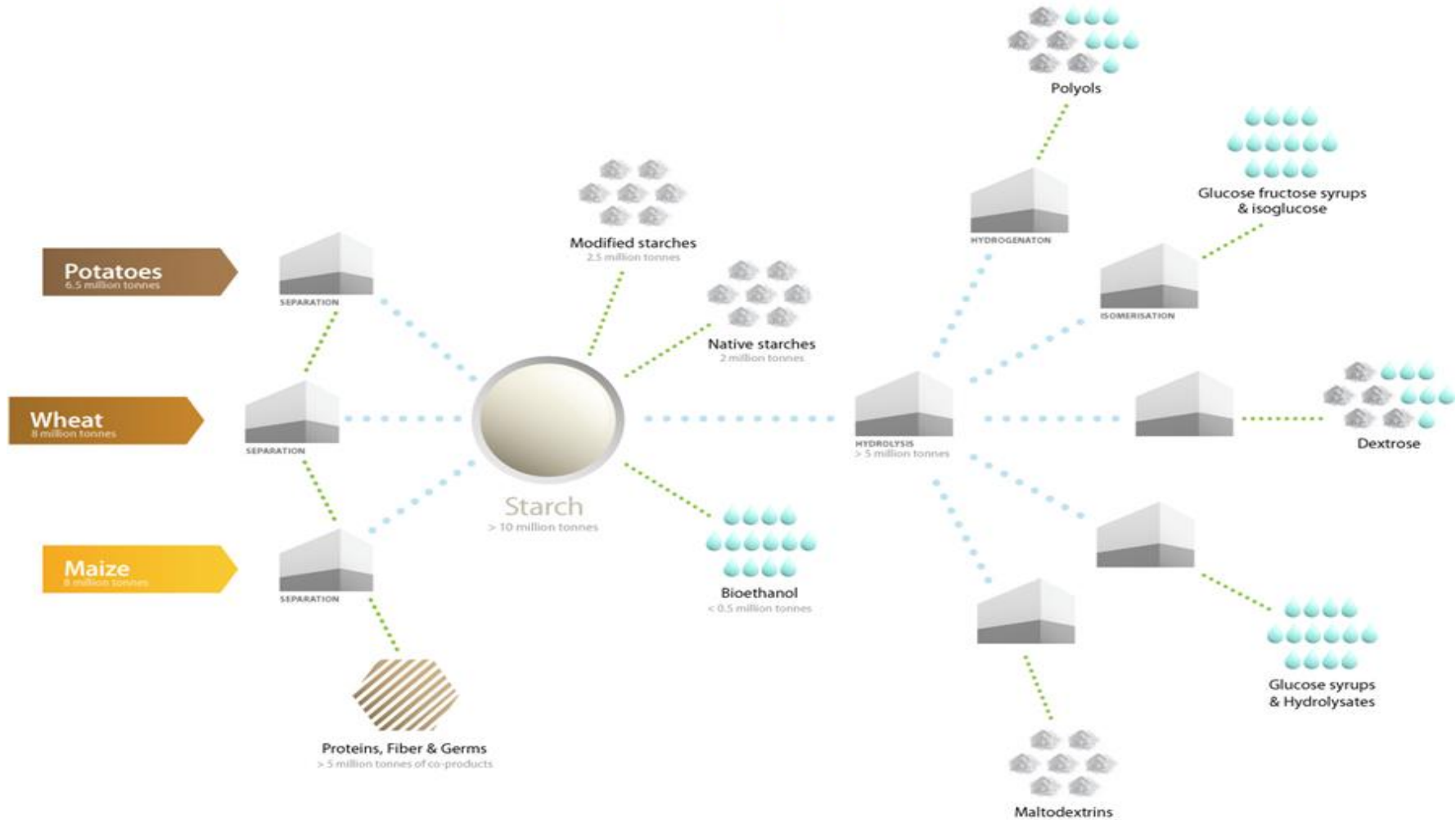
Total : 10,7 Mio tonnes

Starch production in the EU

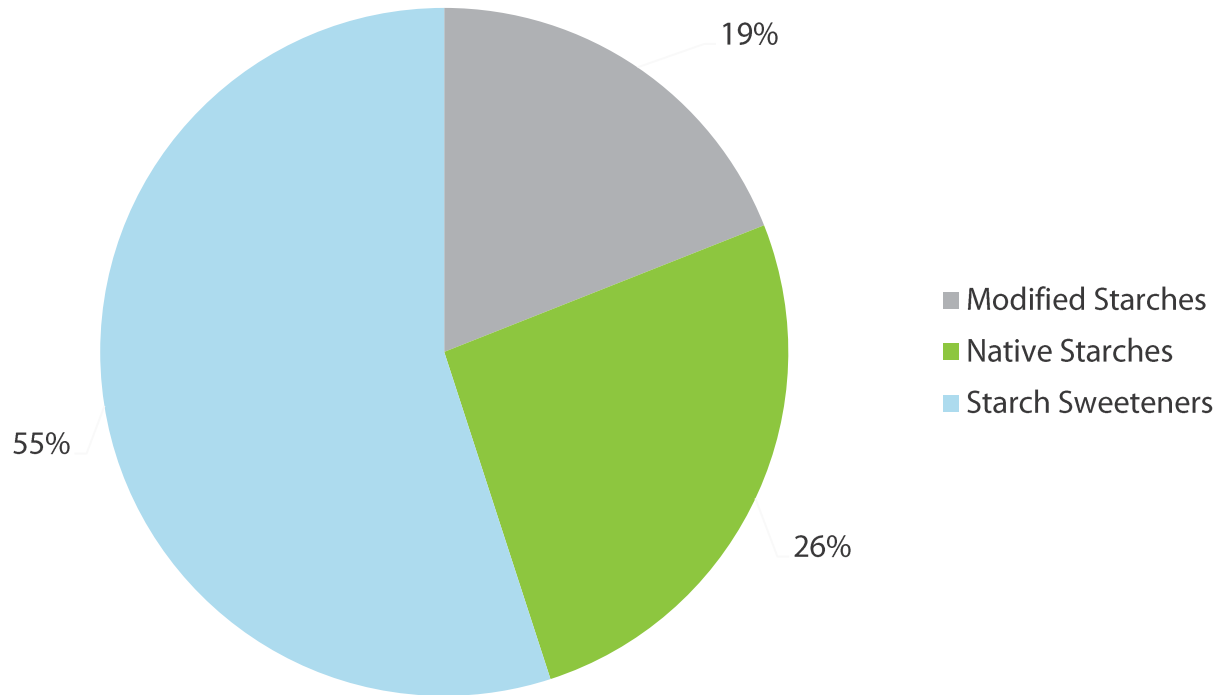
Mio tonnes



The starch production process in Europe and total output

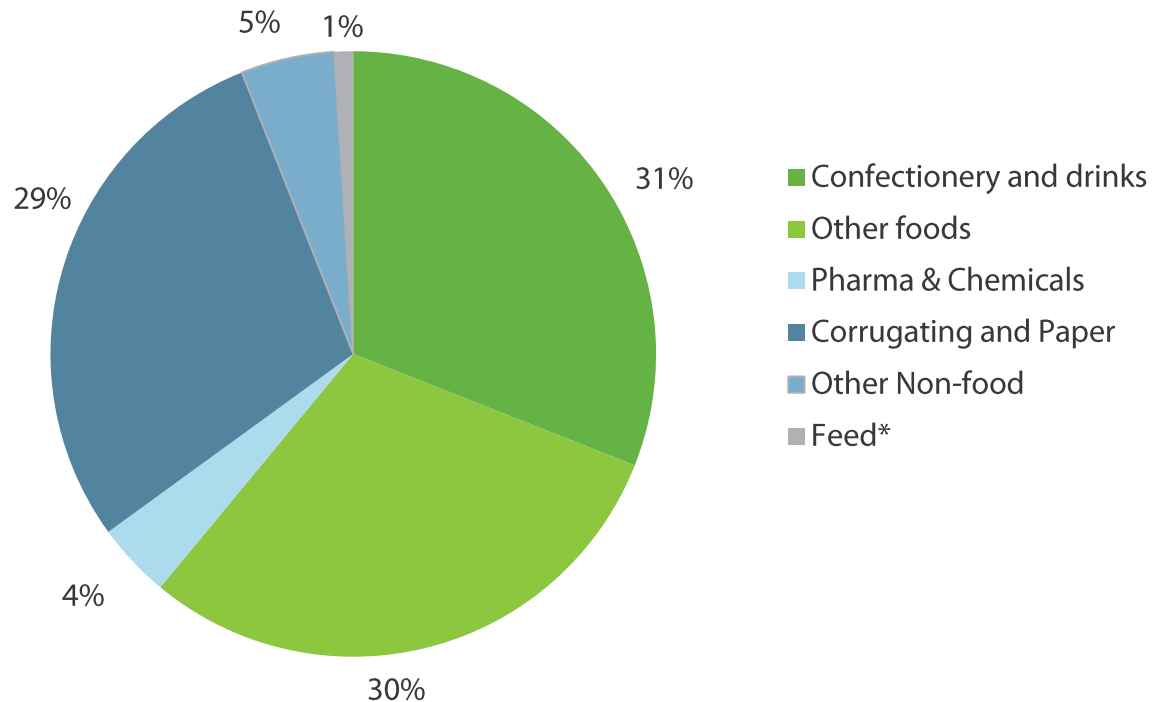


EU sales of starches & starch sweeteners



Total Market: 9,3 mio tonnes

Main starch applications

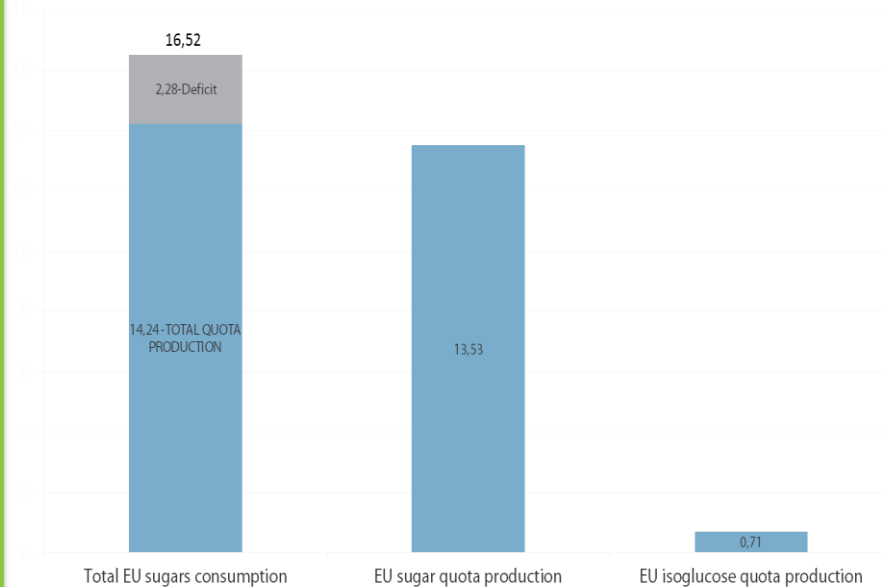


Total Market: 9,3 mio tonnes

* Excluding co-products amounting to about 5 million tonnes

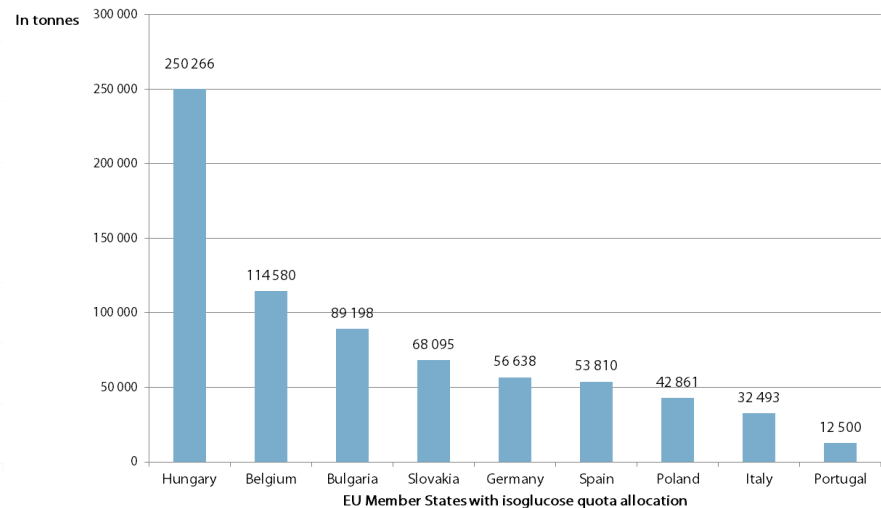
The past

EU sugar and isoglucose under quotas



Source: European Commission balance sheet
2015/2016 pre – final production

Isoglucose production quotas per Member State

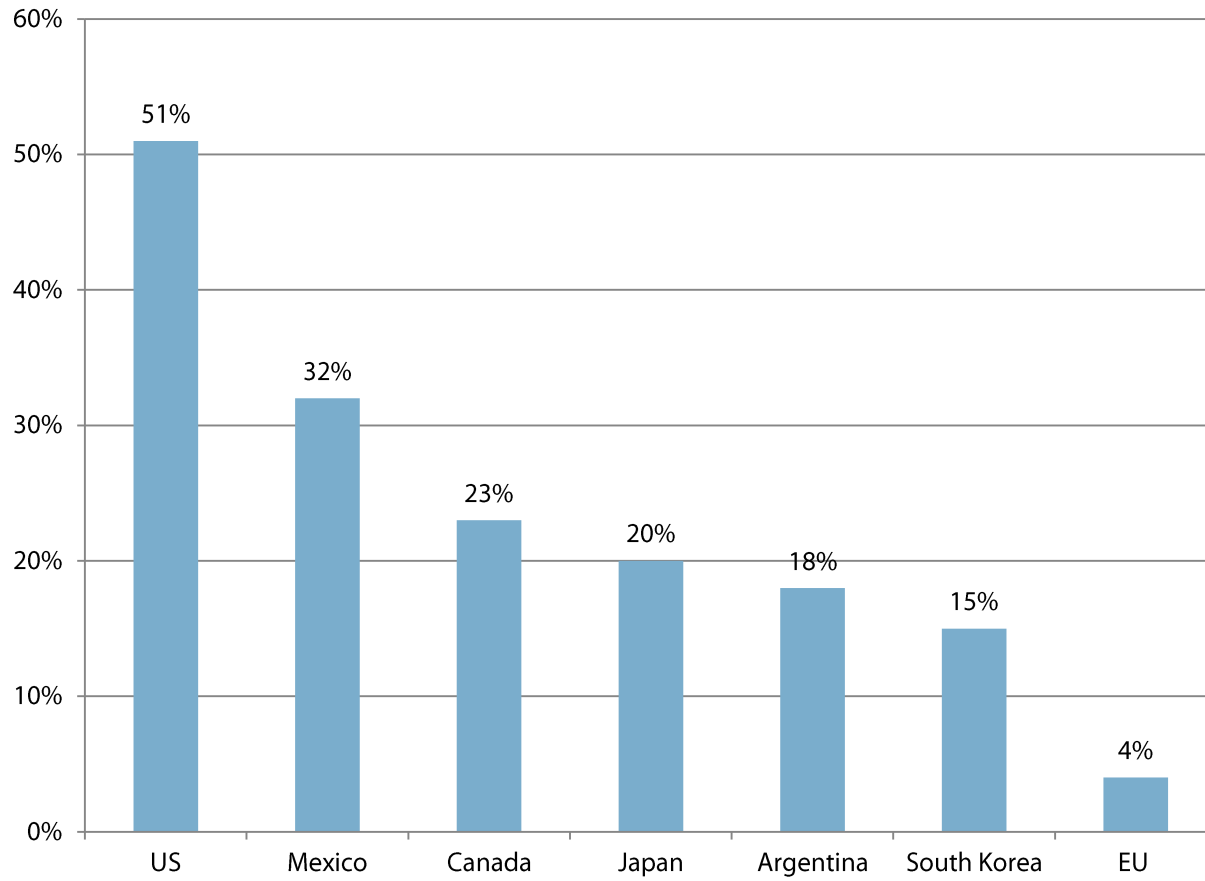


Source: Annex III of EU Regulation 1308/2013

Isoglucose – as from October 2017

- The possibilities
 - Freedom to produce and optimise production
- How much additional isoglucose will be produced?
 - Starch Europe position: “2-3 million tonnes over time”:
 - Share of 13% - 19% of EU sugar market based on 2016/2017 EU balance sheet
 - Range confirmed by other sources such as the Commission (pre-2017 outlook), Rabobank and LMC
 - How much customers demand, will depend on:
 - Functionality
 - Price
 - Consumer acceptance

Isoglucose's relative share of sugar market by regions



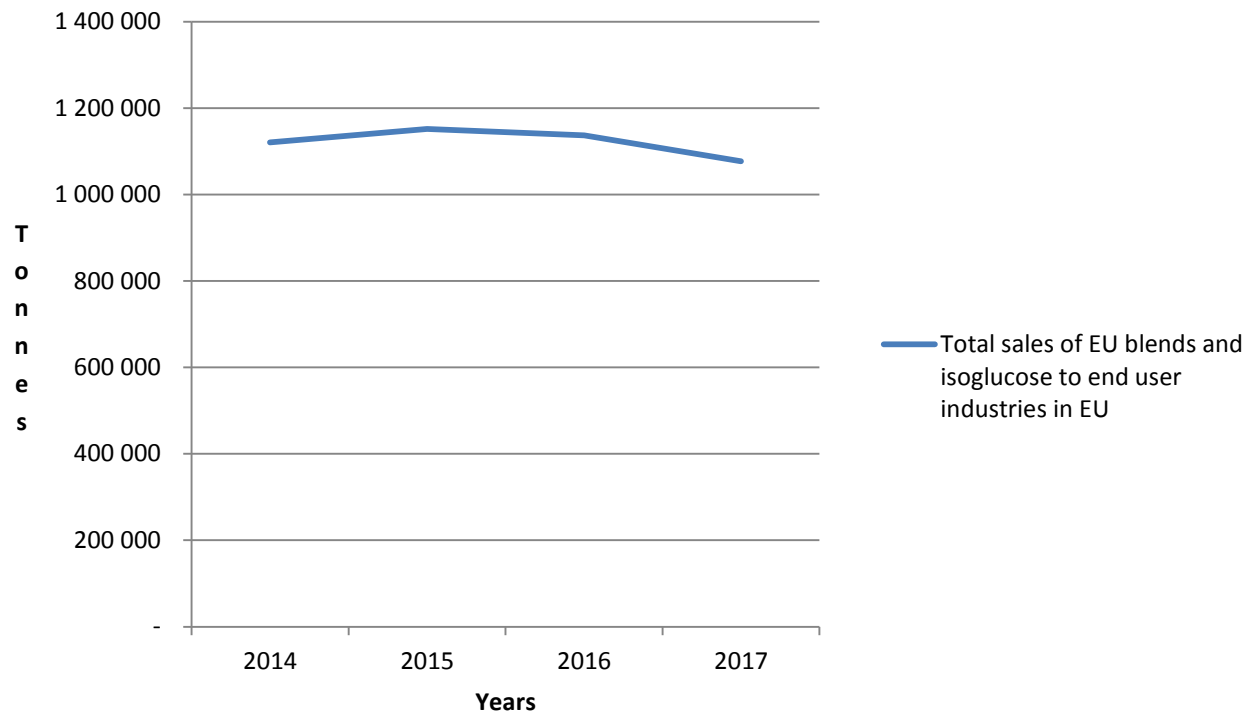
Source: LMC in NGM ART, USDA, 2011

Which direction will Europe go?

- Isoglucose production will gradually grow on the EU sugar market
 1. Fully-fledged alternative for sugar users
 2. Economies of scale
 3. Isoglucose production cannot expand from one day to the other
 4. Competitive beet sugar industry in Europe
 5. Sugar prices relatively low
 6. Public and private sugar reduction initiatives

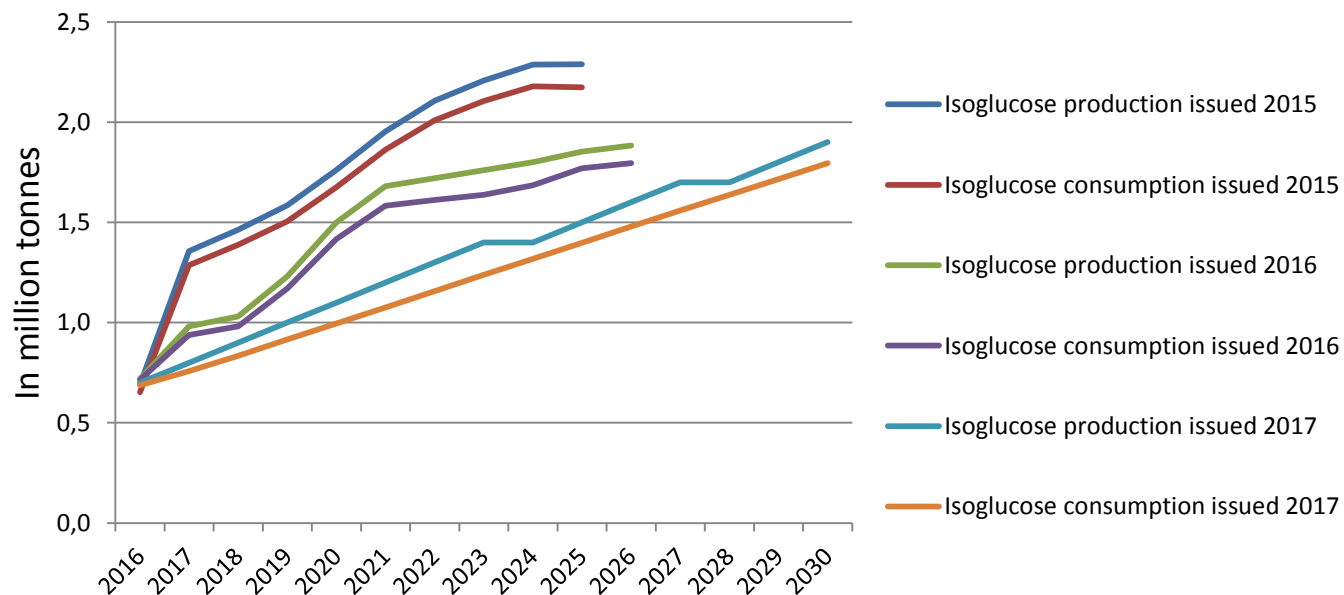
EU sales of starch-based syrups have decreased since 1 October 2017

Feedback from members on sales of EU blends and isoglucose to end user industries in EU



Commission forecasts issued in 2015-2016-2017

- Shows a decreasing trend in isoglucose forecasts over the years:



Long-term opportunities for EU farmers

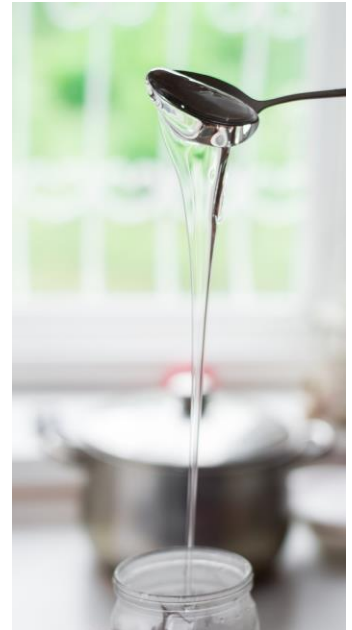
Increased output will be beneficial to EU farmers as this will broaden their outlet for cereals:

- e.g. a growth of 3 additional million tonnes of wheat (about 2% of EU wheat crop)



Long-term opportunities for the food industry

- Isoglucose can be used as a high-quality and full-fledged alternative to sugar in many food applications due to its specific functionalities:
 - liquid
 - textures, flavours enhancer
 - blends well



Long-term opportunities for the bioeconomy

- Starch biorefineries deliver to the four outlets of the bioeconomy (food, feed, industrial and energy)
- Functionality of Glucose-Fructose Syrups in both food and industrial applications
- Starch industry asset optimization will benefit the bioeconomy, a priority for the post-2020 CAP



Increased production announcements to date

- Two new starch plants announced so far
 - Kall ingredients in Hungary: 530,000 tonnes of maize per year, HUF 9.2 billion (€ 29.6m) government grant
 - Sudzucker in Germany: 140,000 tonnes of glucose syrup per year. Investment of 125 million euros
- Other starch companies have announced plans to increase capacity
 - ADM: Investment in Bulgaria
 - Cargill : Investment of 35 million € to allow for increased sweetener production in the United Kingdom, the Netherlands and Poland

Stakeholders want to know more

- www.starchinfood.eu , blogs, videos



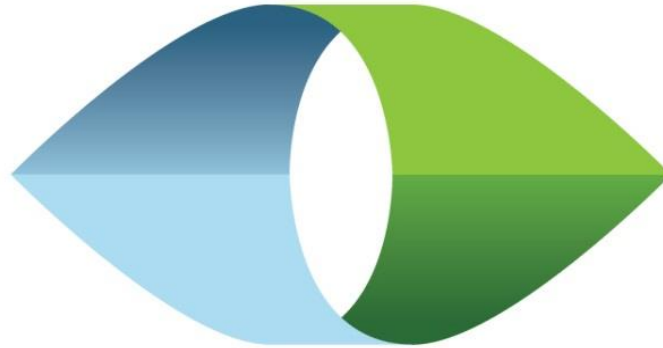
- Product factsheets



- Position paper on end of quotas
- Alliance building
- Events across Europe and in Brussels (e.g. Starch Europe conference on 17 October on end of quotas)

Conclusions

- Starch Europe members remain optimistic that isoglucose production and consumption will grow over time in the EU
- Bearing in mind today's difficult context of low sugar prices, we maintain our long-term forecast of 2-3 million tonnes of EU annual market demand
- Opportunities exist for all:
 - for the starch sector – asset optimization to better serve the market, continued innovation
 - for farmers – increased demand for agricultural crops
 - for food industry – increased sweetness options across Europe & more price risk mitigation options
 - for Europe's biobased economy – Starches, Glucose Fructose Syrups, fibres and proteins can serve multiple markets – food, feed and industrial outlets.



STARCH
EUROPE

43 Avenue des Arts – B-1040 Brussels
Phone +32 2 289 67 60 info@starch.eu
www.starch.eu