Alberto Rosado
Global CIM Biscuits

Oil and fat solutions for biscuits

AAK

Agenda

1. Vision, brand promise and foundation
2. History and geographical footprint
3. Customer Co-Development
4. AAK capabilities & solutions
5. The Innovation Story of Akobisc 2.0

Vision

The **first choice** for value-adding vegetable oil solutions

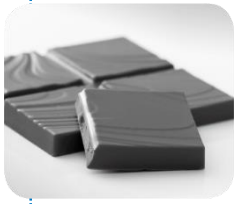
Brand promise

We achieve **lasting business value** together with our customers through **value-adding** vegetable oil **solutions**

History

1871
- Plant established in Aarhus, Denmark

1960
- R&D and modern production make the company a market leader in speciality fats



1982–2000
- Subsidiaries established in the UK, the Netherlands, USA, Mexico, Malaysia, Russia, and Australia

1992
- Low/no trans margarine and filling fats launched

2004–2014
- Subsidiaries established in Uruguay, Brazil, China, Turkey, Belgium, USA and Colombia

2005
- Started developing speciality products for Infant Nutrition

2015
- **TROPICAO™** – launched and awarded Best Confectionery Innovation at Food ingredients Europe
- **Akopastry HP** – launched and awarded Best Bakery Innovation at Food ingredients Europe

CAPABILITIES BUILT OVER 140 YEARS

1918
- Plant established in Karlshamn, Sweden

1965
- Margarine and ice cream plant in Karlshamn, R&D laboratory set up

1986
- First shea products for cosmetics

2003
- Founding member of RSPO

2005
- **Start of AAK** Merger of Aarhus United and Karlshamns AB

2007
- Established Advanced Lipids, JV with Enzymotec

TODAY
- Continued global expansion in Singapore, India, Japan, China, Brazil and USA.

Global network of Customer Innovation Centers

Our customers' needs result in innovative AAK solutions

CCF

- Globalization
- Market differentiation
- Cost efficiency
- Product quality

CCF

- Health
- Market differentiation

Dairy

- Health
- Cost efficiency
- Market differentiation

Bakery

- Health
- Cost efficiency

Special Nutrition

- Natural
- Market differentiation

Special Nutrition

- Market differentiation
- Tailored nutrition

Customer Co-Development approach

Adopted based on customer needs

Functionality of fat in Biscuits

Requirements

Physicochemical aspects

Stability during shelf life (recrystallisation)

Compatibility with coatings

Resistance to Hydrolysis

Resistance to oxidation

Constant quality & behavior

Texture-Structure

Source of energy

Performance

Crystallization

Heat transfer

Lubrication

Dough & product structuring

Shortening effect

Emulsification, stabilization & air inclusion

Shelf life increase

Convenience

Organoleptic

Mouthfeel / Palate Cling

Aroma release & support

Dry / Fatty / Sticky

Buttertaste

Colour / Shiny / Dim

Continuous & Smooth

Plastic

Intrinsic

RSPO

E-free / natural

Low TFA / SAFA

High PUFA / Omega-3

Low 3-MCPDE / GE

Organic

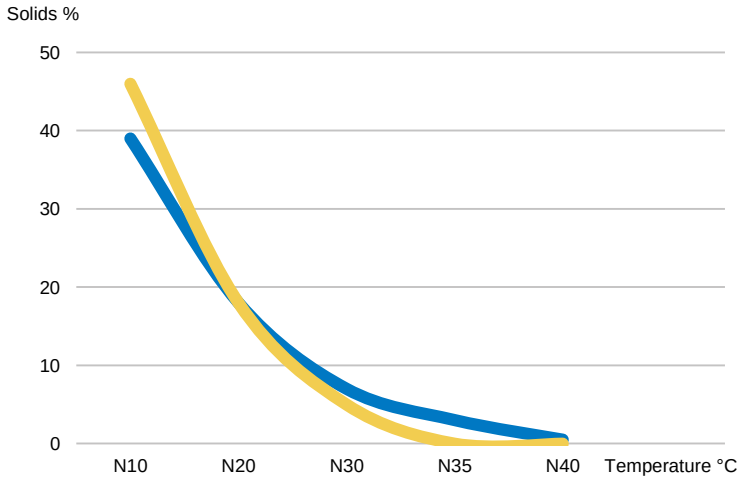
Kosher / Halal

Advanced Butter Alternative Technology

AAK understands the role butter plays in making the perfect biscuit, cookie or shortbread, and can work with you to achieve the taste, texture and snap you're looking for.

Cookie Dough

- Simplify production by switching to well plasticised, smooth vegetable fats which are easier to work than butter, or go pumpable for even easier handling
- We can even mimic the melt profile of butter



Cream Fillings

- Alternatives for biscuit fillings with excellent mouth feel are also a possibility, with your own customised flavour profile

Requirements of a filling

Processing
- Crystallization
- Tempering
- Aeration
- Rework

Sensory
- Flavor release
- Snap/hardness
- Melt down

The choice of filling fat affects many properties

Recipe
- Moisture content
- Liquid oils
- Nuts
- High amount of CB

Shelf life
- Bloom stability
- Heat stability
- Oxidation stability

Labelling
- Raw materials
- Non trans, non hydro
- Low SAFA

Bloom retarding fillings

Bloom caused by migration from filling fat

AAK solutions:

- Delays recrystallisation on surface
- Proper crystallization
- Tailored aeration properties
- Pleasant melting profile
- Tolerance to hazelnut oil

Bloom retarding solutions for cookies and biscuits

In dough:

- Preserves the chocolate nomination because there is no need to add anti-bloom fats to the chocolate coating
- With comparable melting curve and fatty acid profile to palm oil
- Low in 3-MCPD esters
- Non hydrogenated oils or fats

In chocolate coating:

- Creamy mouthfeel: It is possible to achieve a creamier sensation in a dark chocolate with a high content of cocoa.
- Low waxiness
- Maintain the experience by improving the snap which is a typical high quality chocolate characteristic

	Palm oil	In dough solution
Saturated fatty acid (%)	50	48
Mono-unsaturated (%)	40	44
Poly-unsaturated (%)	10	8

Indicative values

Release Agents

We have a range of Release Agents tailored to your needs

Rapeseed Oil	Palm Fractions	Lecithin	PGPR	Waxes	MCT	Anti-Oxidant	Water	Cereal	Unit/Slab/ Celebration Cakes	Swiss Rolls	Jaffa cakes,	Madeleines	Biscuits with inclusions & Cookies	Application Preference*			Shelf Life (days)
														Spray	Spin	Drip & brush	

- General purpose products range which can be applied by spinning disc or drip bar & brush, though it is most often sprayed.
- Agents that can lower the viscosity so it can be dripped onto a flat surface.
- Can be sprayed into soft cakes molds.
- Designed for biscuits and cookies with inclusions.
- Could contain Carnauba wax for extra release power.
- Containing palm fractions which are designed for use in warmer climates, where a higher melt point is needed.

Customer Co-Development approach

Adopted based on customer needs

The Innovation Story of Akobisc 2.0

<u>Major market needs:</u>

- Sustainability
- Low SAFA
- Non Hydro

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<u>Function of fat in cookies & biscuits:</u>

- Shortening effect
- Aeration
- Dough quality (non oily)
- Flavor perception & color

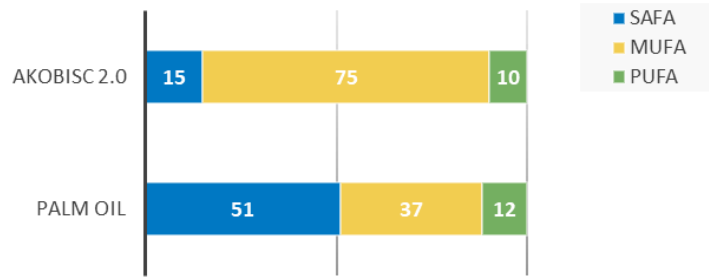
= **Akobisc 2.0**

A liquid oil based solution for cookies

Through co-development, we deliver value adding solution

A biscuit fat solution, extremely **low in saturated fatty acids**, fully based on liquid oil and **free of tropical fats.**

Health Low in SAFA, 3-MCPD; non-hydro



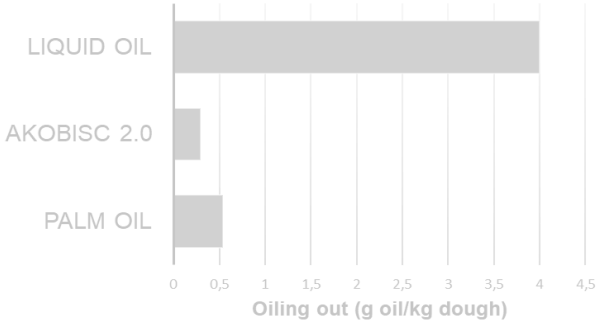
Enabling a **simple production process** with **quick air uptake** and **shorter mixing times.**

Process Efficiency

Less breakage of inclusions
All-in-one mixing or 2 step mixing
Time saving

Resulting in a stable and structured biscuit dough with **no oiling out** and the **right amount of air inclusion.**

Functionality Perfect dough quality
All type of doughs



And... the final biscuit or cookie is of **perfect quality.**

Sensory Perfect crunch, bite, snap
More complete inclusions
No discoloration of cookies over time, no fat bloom

Color follow up of cocoa cookies

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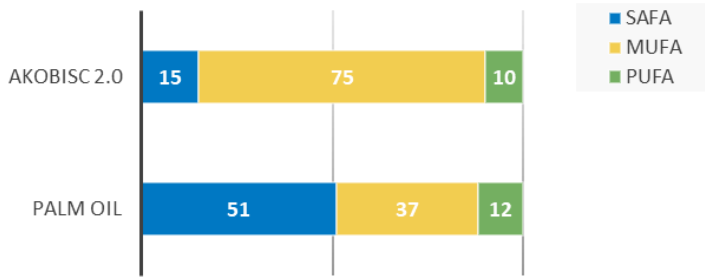

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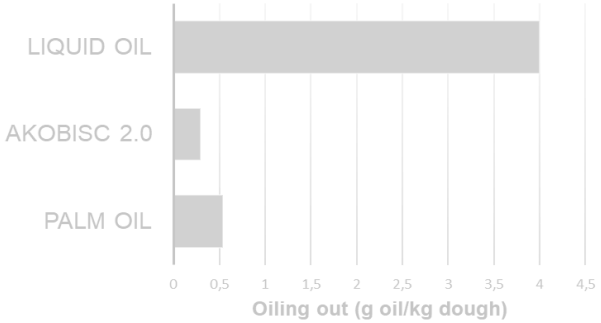

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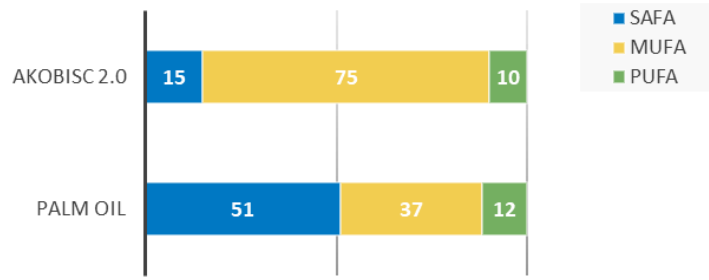

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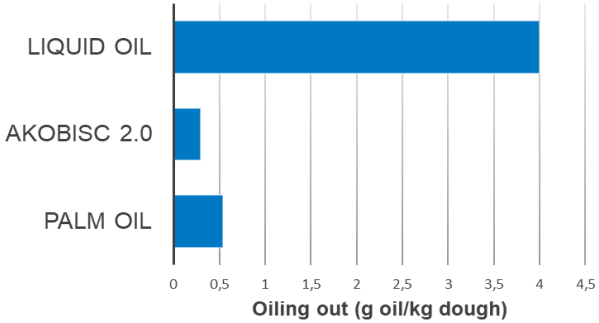

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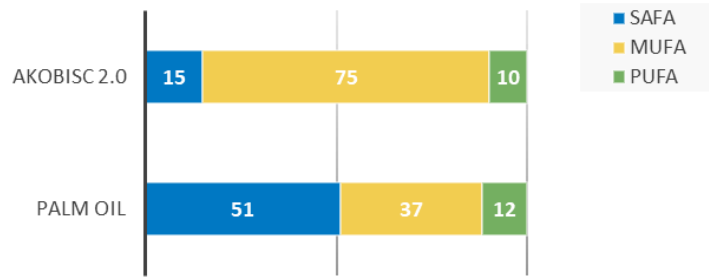

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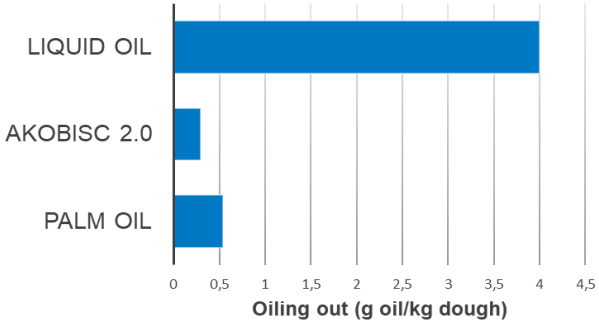

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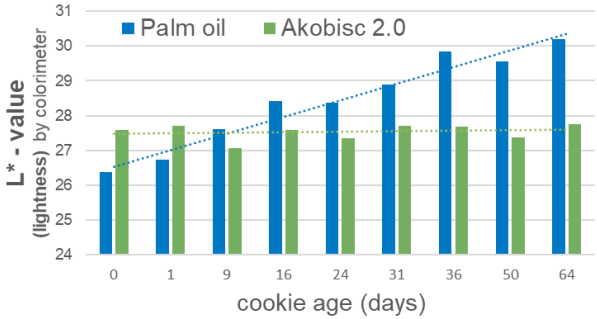

Color follow up of cocoa cookies

How can we work with you?

- **Alberto Rosado**

  Global Customer Innovation Manager Biscuits

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We are AAK – The Co-Development Company

Thank you!

www.aak.com