Derfor er ingredienser et fokusområde på DTU og KU

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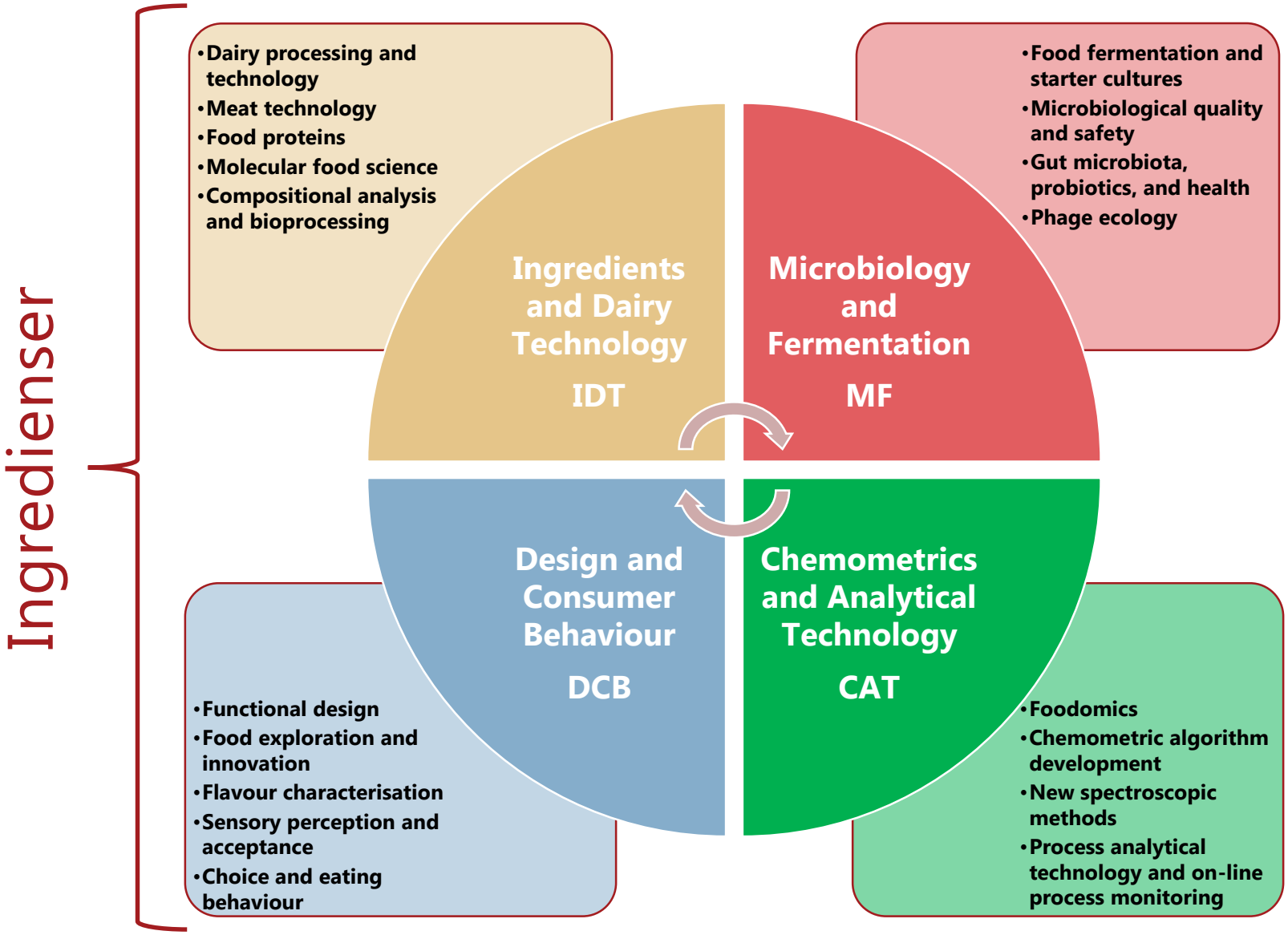
KU FOOD ingrediensforskning fordi vi

- Har tæt samarbejde med ingrediens- og fødevareindustrien – med fokus på industriens udfordringer og vækstmuligheder
- Uddanner kandidater til ingrediens- og fødevareindustrien via forskningsbaseret undervisning
- Har grundlæggende viden om og er internationalt anerkendt indenfor områderne **fødevarematricens molekylære funktionalitet**; de **produktionsprocesser**, ingrediens-industrien har brug for; og **forbrugernes forståelse og accept** af ingredienser
- Har fokus på fødevaresikkerhed og bæredygtig produktion af *nok* sund, velsmagende og nærende mad
- Har tæt adgang til en række tilknyttede forskningsdiscipliner – KU satser stort på tværdisciplinært samarbejde

Sektioner & Forskningsområder på KU FOOD



Perspektiver indenfor ingredienser – et par eksempler

- Biobeskyttende kulturer og probiotika udviklet/karakteriseret i samarbejde med virksomheder – sikrer bedre fødevaresikkerhed, længere holdbarhed og mindre madspild (Chr. Hansen, Dupont, Sacco, mejerierne m.fl.)
  - Mælkesyrebakterier med effekt mod sygdomsfremkaldende *Listeria* i bestemte typer pålæg
  - Blandingskulturer med effekt mod skimmel i yoghurt
  - Gær med effekt mod mycotoksindannende skimmel på tørrede kødprodukter
- Nye markeder for ingredienser udviklet med et særligt fokus via yderligere forskning (Lactosan)
  - Ostepulver uden smeltesalt (fosfat) udviklet med mejerifokus (valg af de rigtige oste; tilpasning af fremstillingsprocessen; tilsætning af naturlige mejeriingredienser), der via yderligere forskning i aroma åbner for brug som smagsforstærker i utallige forskellige produkter, fra kiks – til pølser – til færdigretter

Vigtigheden af et tæt samarbejde mellem industri og vidensinstitutioner

– eksempler på gode, afsluttede projekter

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SaltLite™: A natural solution to sodium reduction

Challenge

- A salty taste is desired by the consumer, but high salt intake results in serious health issue

Product area

- Cheese (accounts for 55 % of DK dairy exports)

Science "tool-box"

- Industrial collection of dairy bacteria
- Advanced laboratory equipment
- Dairy pilot plant
- Sensory expertise

Solution

- Carefully optimised cheese technology combined with selected bacteria and enzymes
- Patent protected technology
- All natural

Partners

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CHR. HANSEN
Improving food & health

- *PhD KU FOOD (Kirsten Kastberg Møller)*
- *KU FOOD supervisor (Prof. Ylva Ardö)*
- *Chr. Hansen A/S supervisor (Dr. Fergal Rattray)*

Is med umættet olie

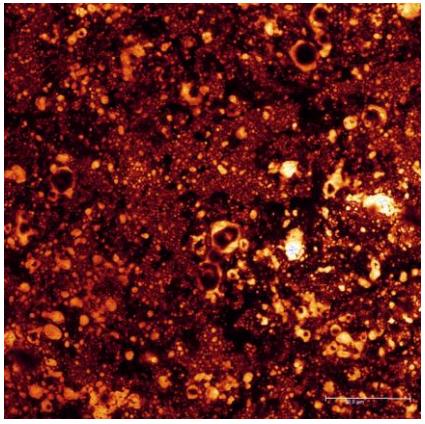
Problem

Fremstille is af flydende umættet olie

Løsning

Ingredienser der gør olie fast

Videnskab



Resultater

Nyt iskoncept:

- Nye ingredienser
- Nye metoder

2 Patenter

4 Publikationer

Partnere

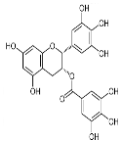
- *Erhvervspostdoc KU FOOD (Merete Bøgelund Munk)*
- *KU FOOD supervisor (Lektor Jens Risbo)*
- *AAK supervisor (CTO Karsten Nielsen)*

PELUM: Second generation lactose-free UHT processed milk drinks with functional polyphenols for export markets

GOAL:

To increase the shelf-life of lactose free UHT milk by adding small doses of plant polyphenols to minimise unwanted chemical reactions in milk (Maillard reactions)

WHY:



- Increased market potential for milk in China
- Increased awareness of lactose-intolerance
- Increased shelf life is demanded for lactose free UHT milk for export markets

SCIENCE:

Polyphenols from plants will reduce the chemical reactions responsible for off-flavour formation in UHT treated lactose free milk during storage at ambient temperature by trapping dicarbonyls (highly reactive intermediates formed during Maillard reactions)

OUTCOME:

- ✓ Improved flavour of lactose free UHT milk
- ✓ Sensory quality and volatile compounds documented in a 12-months storage experiment
- ✓ Extensive elucidation of reaction mechanisms between polyphenols and milk components -> new collaborative project between partners

Patent application pending

WHO:

KU FOOD Assoc. Prof. Marianne Nissen Lund

Arla Foods amba

Innovation Fund Denmark

InnovationsFonden
FORSKNING, TEKNOLOGI & VÆKST I DANMARK

Hydroblood: Enzymatic hydrolysis of blood for protein rich supplements

GOAL:

The main objective is to screen and identify proteases (enzymes) that can be used in an efficient enzymatic process, where the heme group is separated from the protein part (hemoglobin) in pig blood, to produce edible protein from the blood side stream

WHY:

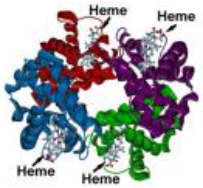
These protein enriched products can be sold as components for fortified foods, increasing the value of the slaughter house side stream blood

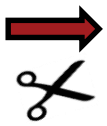
SCIENCE:

Establish and optimize the process for enzymatic hydrolysis of the hemoglobin, in order to separate the heme group from the hemoglobin in pig blood and reduce the bitterness of the protein

OUTCOME:

- ✓ Enzymatic process for separation of the protein fraction from heme developed
- ✓ The spray dried protein powder (hydrolysate) was white and did not provide any discoloration when added to a food product
- ✓ 10% hydrolysate added to a fermented sausage did not affect the quality
- ✓ The yield was 256 g protein / kg hemoglobin
  -> Could potentially lead to 5000 ton protein (DK)





WHO:

KU FOOD Assoc. Prof. René Lametsch

KU FOOD Postdoc Cristian De Gobba

Danish Crown Ingredients

DANISH CROWN
INGREDIENTS