



Innovate
UK

Knowledge
Transfer
Partnerships

EST. 1887

MURPHY & SON



University of
Nottingham

UK | CHINA | MALAYSIA

Unlocking business innovation
through Knowledge Transfer
Partnerships

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Technical Manager

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Murphy & Son Ltd

Since 1887 supplier and manufacturer of

liquor treatments and processing aids

ingredients, refinements, hygiene products

manual handling equipment.

- SME (good for collaborations and funding!)
- BRC Grade A
- Strong technical support
- UKAS accredited laboratory, Quality Control
- Research & Development; Trouble shooting!
- Catomance Technologies: premium range of paper, leather and textile treatments

passionate about beer and the beverage industry!





Advertisements

BREWING TECHNOLOGY
MURPHY & SON
LIMITED

The Cedars Laboratories, Sheen Lane, Mortlake,
 London, S.W.14

Branch Office and Laboratories:
 The Bureau of Bio-Technology, 41, Headingley
 Lane, Leeds

Works:
 Old Basford Mills, Nottingham

Our MANUFACTURING DEPARTMENTS specialise in
Brewers' requirements:
 Water Treatment for all classes of Ale and Stout
 brewing; Lactic Acid Treatment and all grades of
 Lactic Acid; Water Hardening requisites and Water,
 Softening materials.
 Dukeron—the Enamel for wood, iron and stone—a
 perfect cask lining; Formoxil—the brewery Disin-
 fectant; N.D.B.—the reliable Copper Finings; Amido-
 form—the yeast food.
 Superol—the preservative solution for wood and
 cement; Potassium metabisulphite; Brewery Paints,
 Disinfectants and Detergents.

Our SCIENTIFIC DEPARTMENTS undertake
 Occasional analyses of raw materials and finished
 products. Periodical and Technical Supervision and
 the investigation of abnormal results. Biological
 examination of air, water, yeast and beers. Scientific
 control of Malting, Brewing, Distilling, Vinegar and
 Cider making. Expert advice on insect and fungus
 pests of Hops, Cereals, Timber, Premises, etc.
 Readers of this volume are invited to apply for a
 copy of our publication—the "Bulletin of the Bureau
 of Bio-Technology."

Our TECHNICAL EQUIPMENT includes an Experi-
mental Brewing Plant operated by a Diploma Member of
the Institute of Brewing.

Send us your enquiries for daily requirements and
consult us in technical difficulties.

We offer the results of 40 years' experience in the Brewing Industry.

418

Advertisement from 1929!



About Us

Customer Profiles

We work with some of the
biggest names in the
industry

Improve - Quality of the Product
or Process

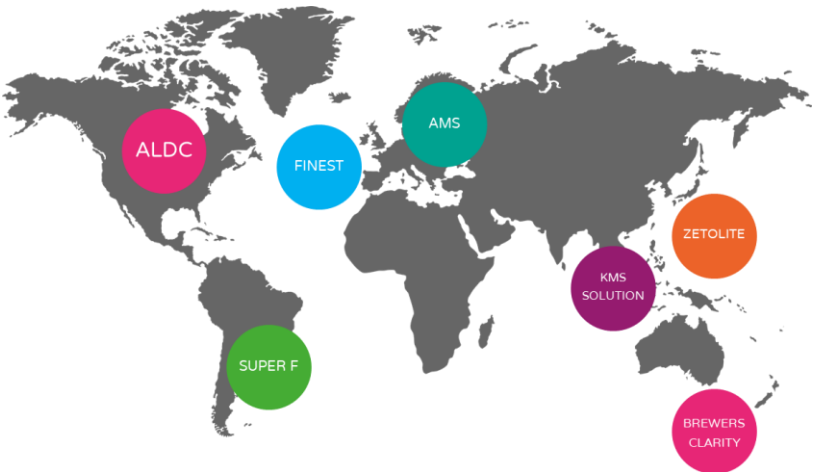
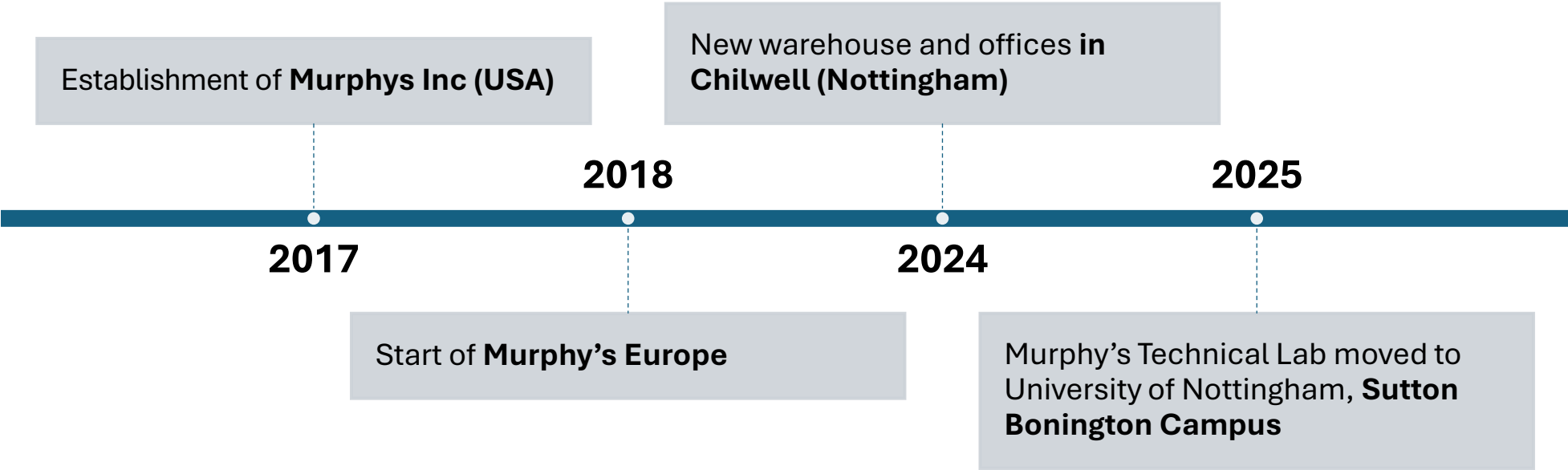
Reduce - Waste, Energy &
Emissions

Save - Time and Money



Murphy & Son Ltd

In the heart of the UK and all around the world



Technical Hub moving to Sutton Bonington



Key focus in the last 5 years

What we focused on

- **Staying Ahead of Industry Trends**
 - Proactively identifying emerging trends in brewing, wine, and cider production
 - Adapting our solutions to meet evolving customer demands
- **Customer-Centric Approach**
 - Actively listening to our customers and responding to their needs
- **Efficiency & Sustainability in the Brewhouse**
 - Helping brewers optimize processes to improve efficiency
 - Providing solutions for a more sustainable brewing operation
- **Industry Education & Knowledge Growth**
 - Expanding expertise in the wine and cider industry
 - Investing in further education for our technical sales team to better support customers

100

Technical talks, scientific presentations, etc. on average by year, on 6 continents

14

Research projects funded, incl. master projects, PhD, KTP, Catapult, Research fellow, etc.

5

New tests in our laboratory

Focus on the Science – 3 years

2021



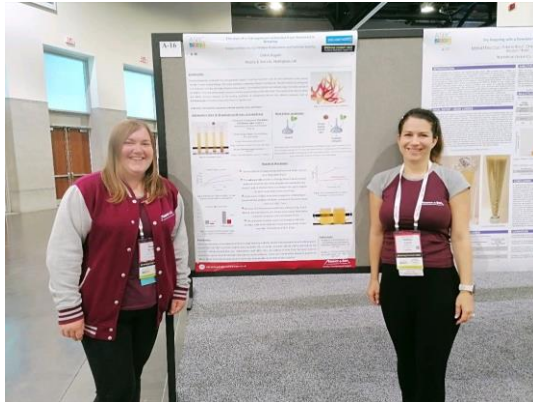
2022



2023



All around the world...



When do we need R&D and NPD

1. Future Proofing (Long-Term Projects)

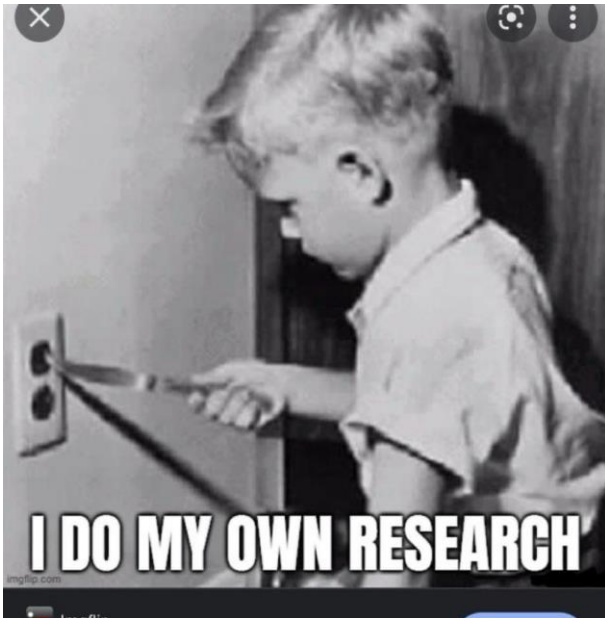
- Cooking up brand-new products that don't exist yet
- Lots of trials, lots of coffee

2. Fixer-Uppers (Short-Medium Term)

- Tweaking old recipes with new science
- Listening to customer feedback (yes, all of it)

3. “Going Shopping” (Market Scouting)

- Hitting up global events for shiny new ideas
- Bringing back cool products for our portfolio
- Always tested in-house — no mystery box launches here



Lab team

- Daily QC of in-house manufactured or repacked products
- Technical Hub– Customer Focus
 - Analysis of customer samples (beer, wine, cider, juice,.....)
 - Troubleshooting
 - Customised projects



R&D and NPD Team



**Idea
Generation**



Research



New Product Development



**Marketing support
(TDS, data, sales
sheet)**



**Identifying QC criteria for
Production, first production
trials (scale up)**



- Training (internally, distributor, etc.)
- Customer Testimonials
- Coordinating between departments
- Cleaning up
- ...etc

R&D - How do we do it?

**Access to world-class knowledge,
equipment and cutting-edge R&D**

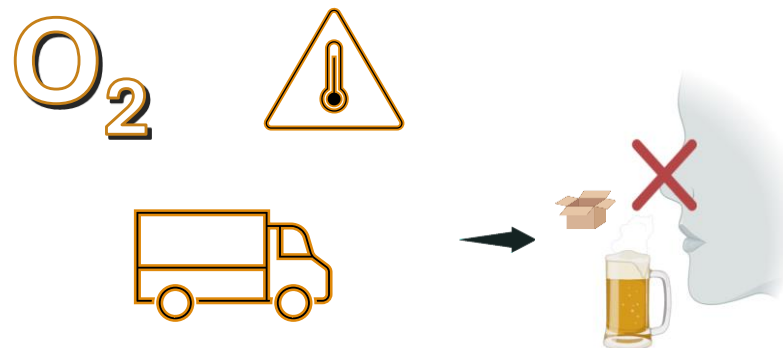


Dr. Aline Brito

Project background



Shift in consumer
behavior + increase in
exports

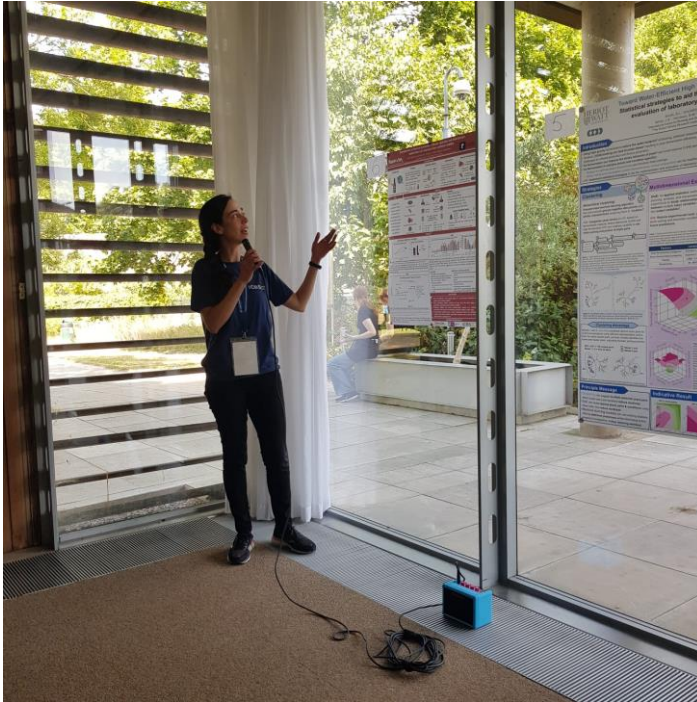


- Small and medium producers struggle to get oxygen in pack below 100 ppb
- It is getting warmer → even in the UK

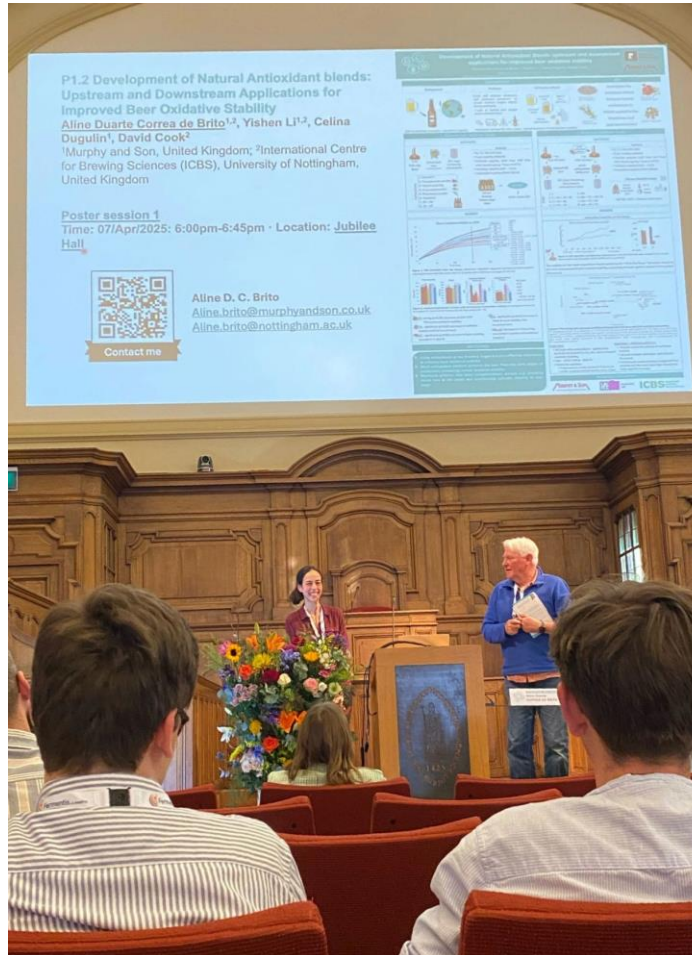
AIM

Investigate the
synergistic
effects between
natural
antioxidants in
blends applied in
the brewhouse
and post-
fermentation

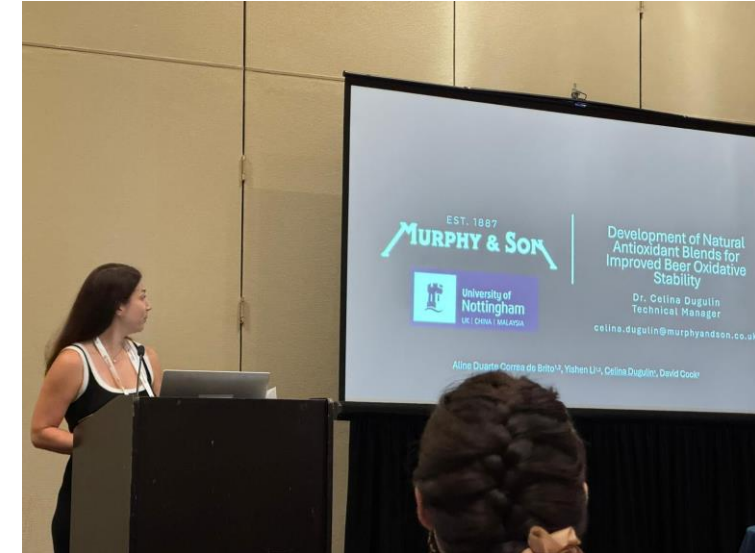
Showcasing Innovation on Stage



CIBD
Sustainability
Conference,
Nottingham,
2025



Trends in
Brewing, Leuven,
2025



Brewing Summit,
Palm Desert 2025

Turning Podiums into Platforms

Research That Speaks Marketing



PRESERVATIVES & STABILISERS

MASHLIFE

VEGAN FRIENDLY. FLAVOUR STABILITY.

What is MashLife?

Increased beer export, higher consumer demands for new and fresh beers and an increasingly competitive and quality focussed beer culture are great incentives to improve the flavour stability of your beers!

MashLife, an extract derived from pomegranates, fights the mechanisms of beer staling - a highly effective product, that is completely natural! The extract does not add flavour or colour. It preserves the colour in pale beers and preserves fresh, crisp beer flavours - for longer!

Improves Beer Shelf Life

The polyphenols found in pomegranate extract form large complexes specifically with iron and copper, which facilitates their removal through lautering, with the trub, and filtering. This impedes the formation of off-flavours, whilst preserving precious hop bitterness and beer colour during storage and transport.

A Natural Fining Agent

MashLife can bind to some haze forming proteins (particularly with thiol groups) and thus supports beer clarification and colloidal stability!

Fights the Skunk

The removal of thiol containing compounds makes the beer more robust against light, hence the formation of skunky lightstruck off-flavours!

CHECK OUT THE SCIENCE

Pomegranate extract was shown to be the most promising novel compound in the improvement of beer shelf life. - Mertens et al. (2021), doi: 10.1002/jib.673



BENEFITS

- Reduces metal ion content by up to 97%
- Reduction of oxidative effects by over 90%
- Preservation of hop bitterness & beer flavour stability
- Improved beer clarification
- Better resistance to sunlight
- 100% vegan & natural product

APPLICATION

How Much To Add

2 - 4 g/l for dark or high gravity beers
1 - 2.5 g/l for pales

For Best Results

Make a 10% mix with ~50°C

Recommended Dosage

Kettle before hop addition
OR
50% to brewing water (before malt addition) and 50% to kettle before hop addition

Activity Range

Great results achieved at wort pH of 5.0-6.0

STORAGE

Temperature

5-25°C | 40-77°F

Location

Ambient temperature, dry, sealed, and away from sunlight

Shelf Life

At the recommended storage temperature, 3 years from the date of manufacture

How Does It Work?

The appearance of off-flavours and the decline of fresh flavour/aroma characteristics (e.g. bitterness, hop aroma) are often linked to oxygen and transition metal ions (e.g. iron, copper) present in packaged beers. In many oxidative reactions, radicals are formed as intermediates, reacting with beer components and greatly catalysing beer deterioration. Iron and copper play a key role in the oxidative degradation of wort and beer, as they drive the formation of these radicals!

MashLife is a naturally occurring chelating agent, meaning it binds to iron and copper (Table 1) stopping them from getting to the oxygen and creating the damaging species in the first place!

It protects your wort from oxidising when it's under high thermal stress and increases the antioxidative power (Fig 1) of your beer! Fresh beer - for longer!

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Significantly improved oxidative stability with pomegranate extract!

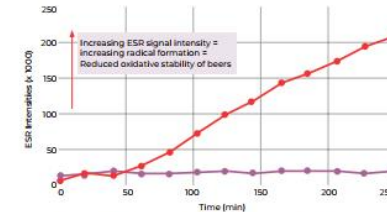


Fig 1: Oxidative stability of forced aged beers with (2 g/l) and without the addition of MashLife, evaluated using Electron Spin Resonance (ESR) analysis.

A Powerful Chelating Agent!

Metal chelation is specific to iron and copper (up to -97% and -87% reduction, respectively), whilst leaving desirable metals like zinc "unharmful"!

Metal ion	ppm	pH	Concentration in filtrate (ppm)	% difference
Fe (II)	17.7	5.0	1.5	-88
		5.7	0.4	-97
Cu (II)	16.2	5.0	9.0	-44
		5.7	2.2	-87
Zn (II)	16.1	5.0	16.2	1
		5.7	15.9	-1

Table 1: Chelating potential of MashLife measured in samples "spiked" with iron, copper or zinc. Data source: Kunz et al., Technical University Berlin, Department of brewing and beverage technologies, 2021

WANT TO KNOW MORE? GET IN TOUCH

If you would like to know more about what we do, head to our website murphyandson.co.uk or to speak to our Technical Support Team, email techsupport@murphyandson.co.uk

 Murphy & Son Ltd

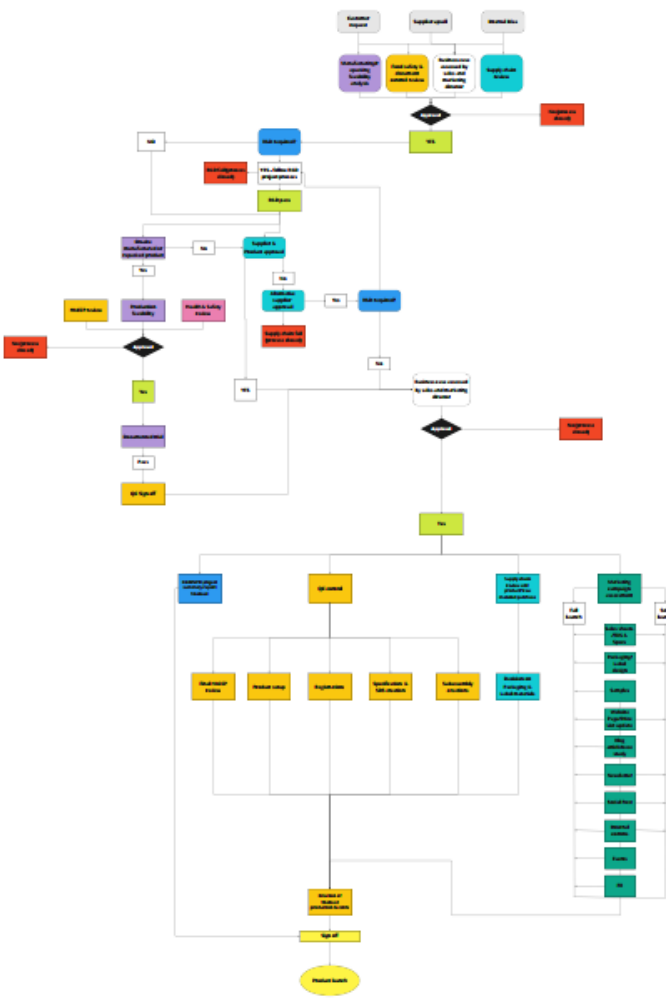
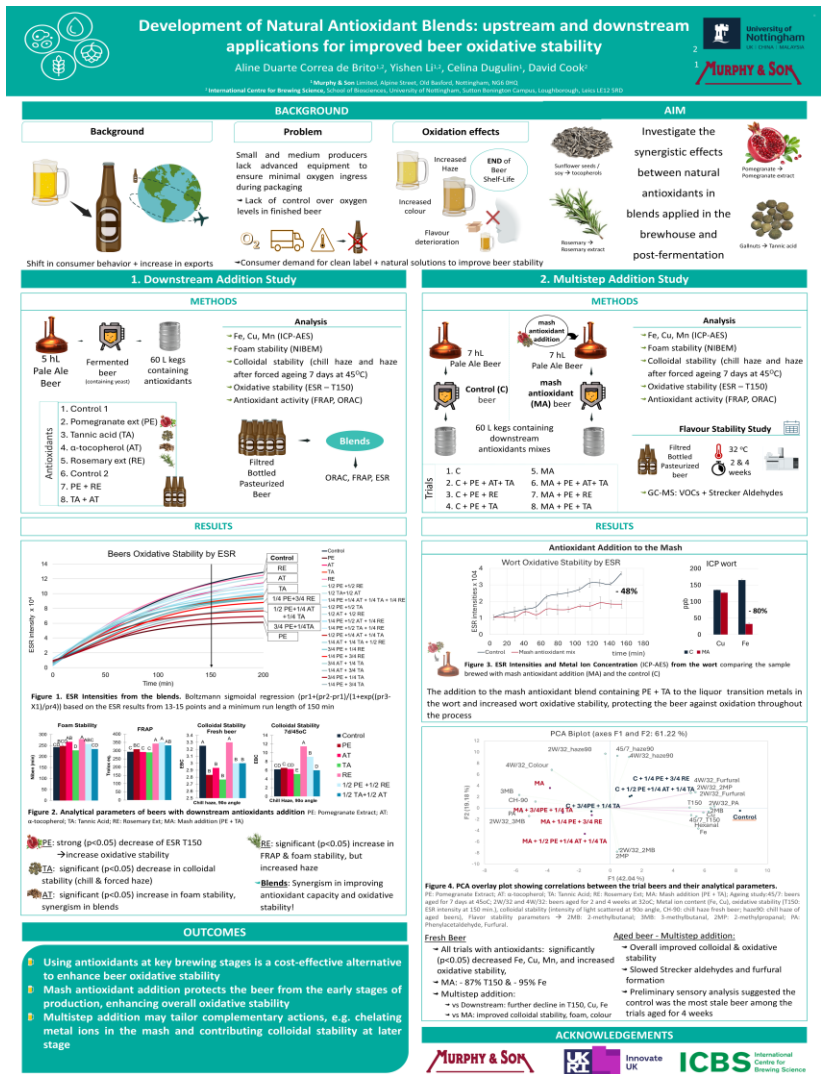
 @murphys1887

 @MurphyAndSonLtd

 Murphy & Son Ltd

Research That is Base for New Product

New Product coming – 2025!



Our KTP Challenge and Flexibility

▶ Challenge:

The first KTP Associate decided to leave the project, requiring us to rehire.



Solution:

The KTP programme was flexible and granted us an extension, ensuring project success.

KTP Key to success

- Good interview process – finding the right candidate – don't rush!
- Leadership & Champions
- Regular documented meetings, joint supervision
- Open communication (transparency about challenges)
- Clear shared goals!
- KTP Associate encouraged to manage the budget
- Sustainability of relationship



Turning Ideas into Action

Why Industry should collaborate with Universities

- **Funding & Resources** – access to grants and shared facilities
- **Talent Development** – pipeline of skilled graduates and researchers
- **Reputation & Networking** – showcase societal and industrial impact
- **Visibility** – publications, patents, and industry recognition
- **Knowledge Exchange** – real-world challenges meet academic expertise



Acknowledgements



University of
Nottingham
UK | CHINA | MALAYSIA



Dr. Aline Brito



Contact me



ICBS International
Centre for
Brewing Science

Prof. David Cook



Innovate
UK

Knowledge
Transfer
Partnerships



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ANY QUESTIONS?

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LET'S CONNECT



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