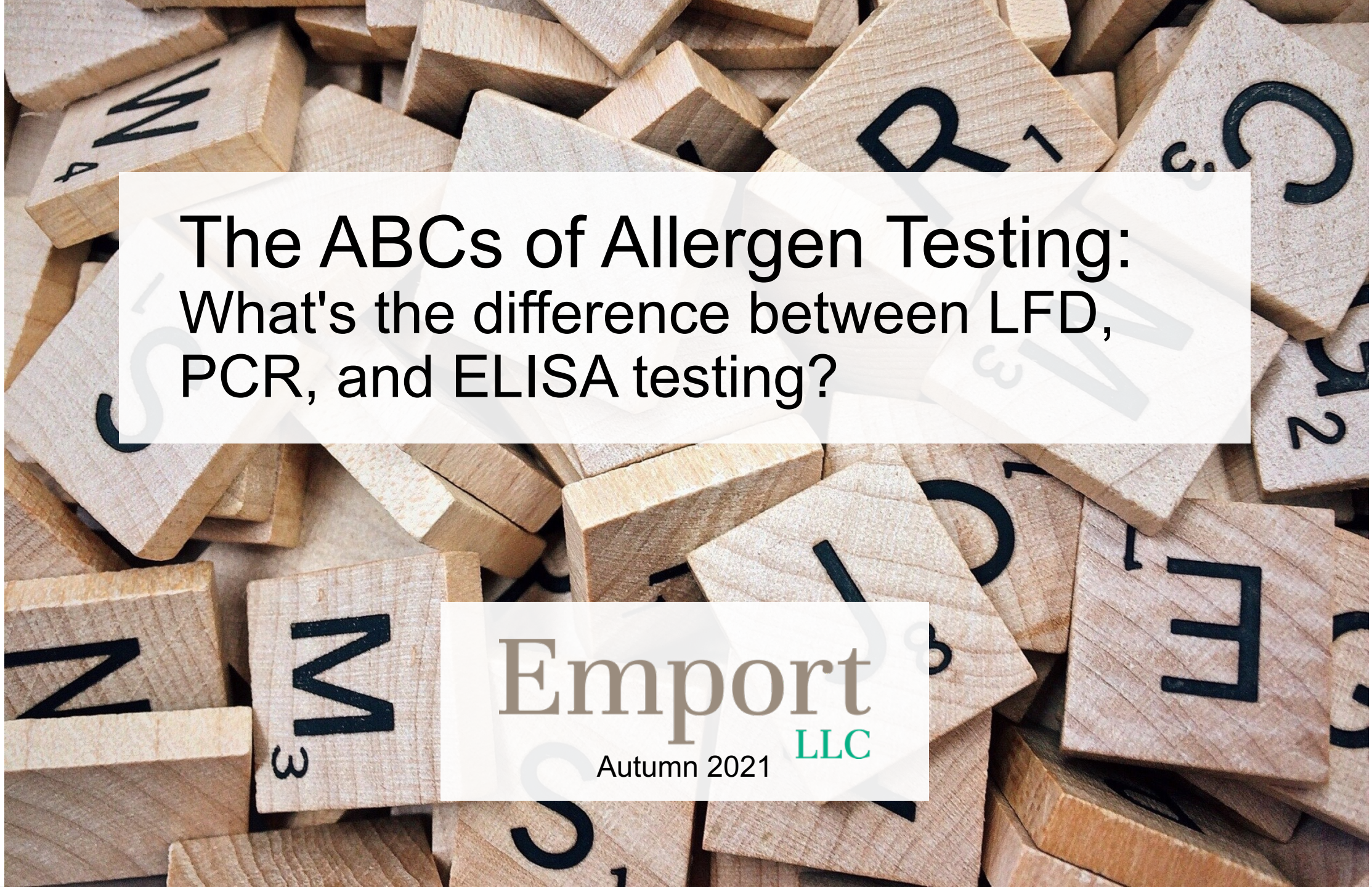

The ABCs of Allergen Testing:
What's the difference between LFD, PCR, and ELISA testing?

Emport LLC

Autumn 2021

Who am I … and why am I talking?

- Emily Kaufman, president of Emport LLC
- US launch of both GlutenTox Pro and AlerTox Sticks
- 10+ years of working with gluten-free and allergen-free food manufacturers
- 20+ years of eating gluten-free

Emport LLC: More Safe Food, More Happy People

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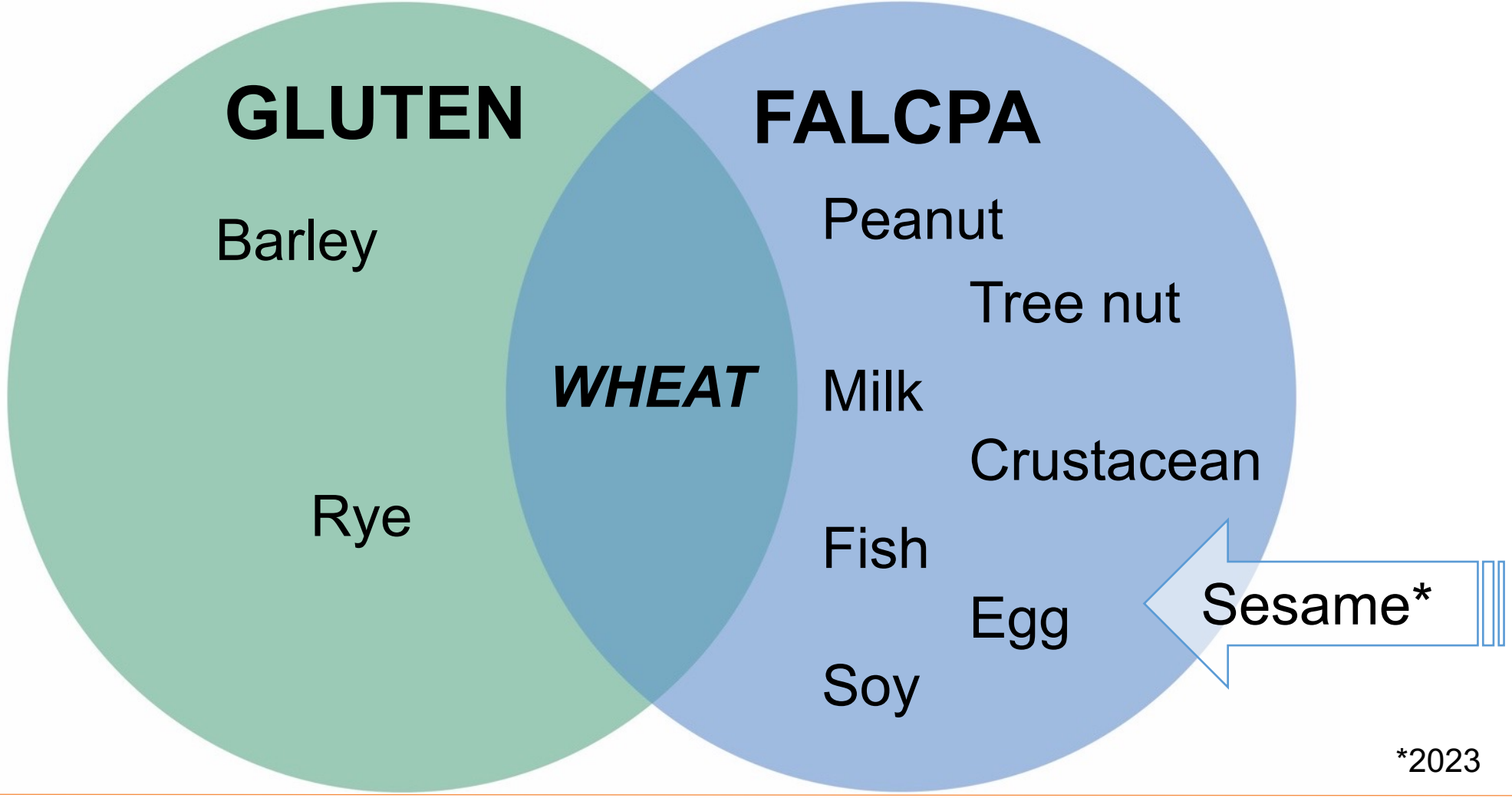
Today's Topics

- What do we mean by gluten and allergens?
- Why do we care?
- What testing tools are available?
- What are their strengths, weaknesses, and ideal uses?
- What makes a test right for your needs?

What do I mean by “allergens”?



*2023

Allergen Testing: Why?

Confirm your ingredients are free of X

- Test volume will vary based on your supplier's risk level
- "We know it is because it just is" = **RED FLAG!**

Confirm your environment is free of X

- Both surfaces and rinsewater are worth testing
- Positive result? Reclean, retest, reevaluate

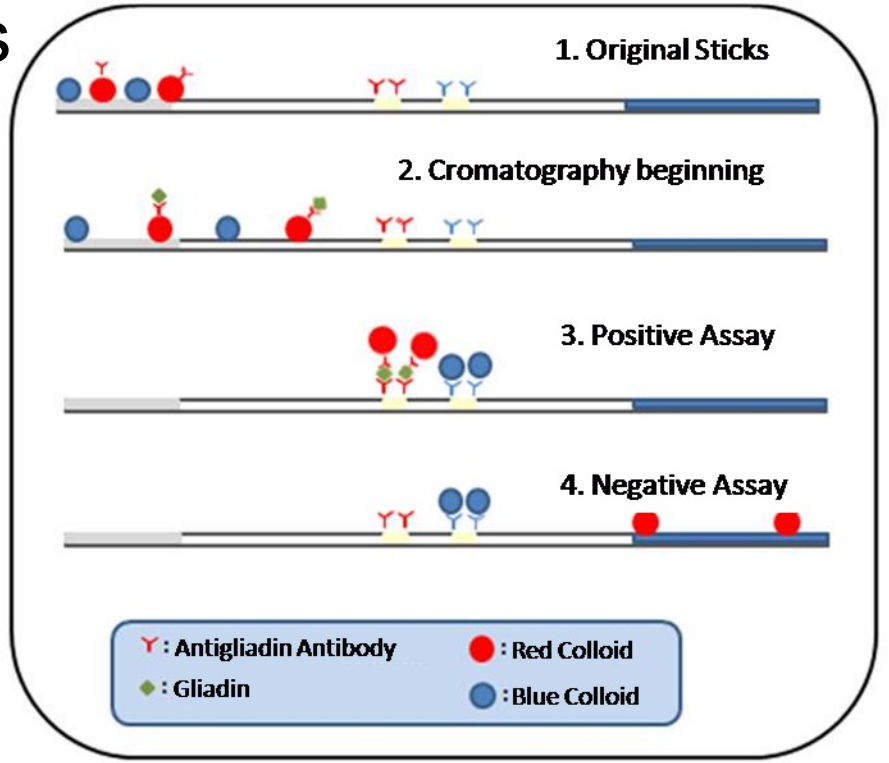
Confirm your finished products are free of X

- First-off product = additional environmental validation
- May be required by your third-party certification program

The alphabet soup of allergen testing: LFDs

Lateral Flow Devices (LFDs) use antibodies and look for protein

- Generally quicker, cheaper and easier
- Often can test both foods and surfaces
- Can run a single test
- Clear yes/no answer
- Great for everyday use
- Price $15 - $30 each



More alphabet soup: ELISAs

ELISAs also use antibodies to look for protein

- Enzyme-Linked ImmunoSorbent Assay
- Quantitative results (specific PPM value)
- Sandwich and Competitive / Direct Formats
- Require time, gear, volume, and skill
- Cost-effective when running multiple samples
- Usually best to leave these to the labs

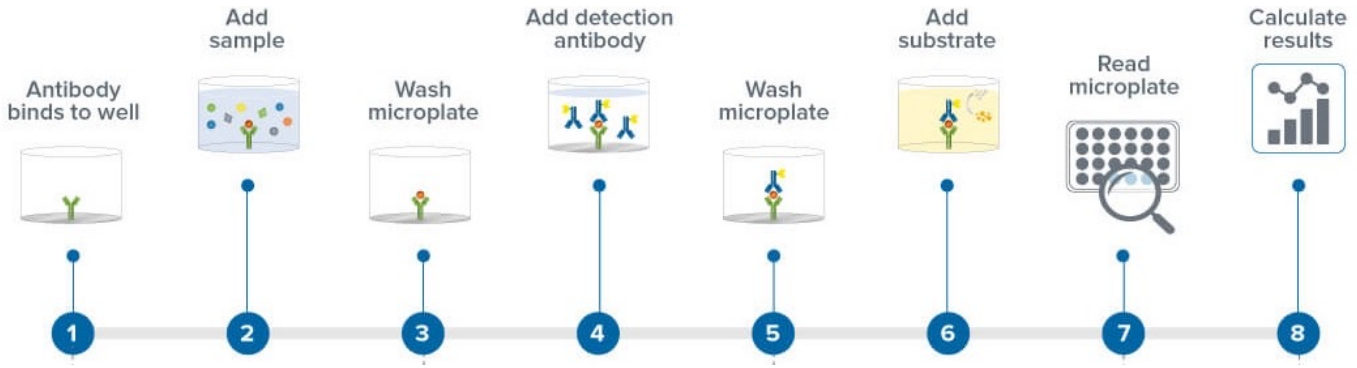


Illustration source:
https://bit.ly/30IwsAg

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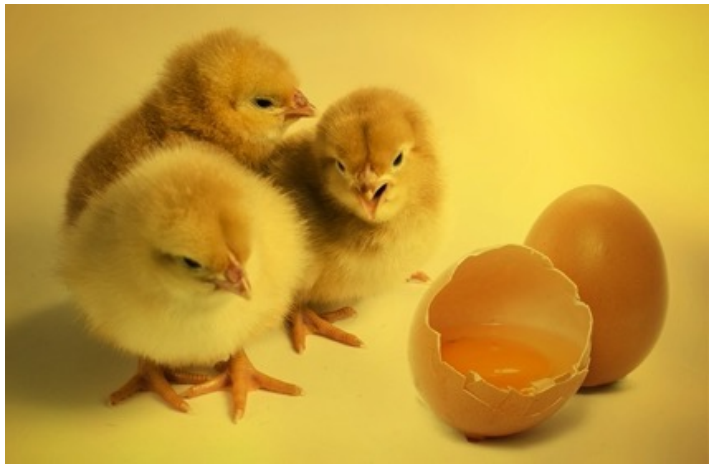
More alphabet soup: PCR

PCR tests look for genetic material (DNA/RNA)

- Polymerase Chain Reaction
- Helpful for samples with little/no protein
- High specificity
- Lab equipment/skill required
- Can help identify food at the species level
- Can be really helpful, or useless
  - Loose correlation between DNA and allergens
  - Egg looks like chicken, no DNA in milk



More alphabet soup: LC-MS, Protein

LC-MS

- Liquid Chromatography Mass Spectrometry
- Mostly used in research settings, but shows promise for labs
- Has the potential to help with incurred / complex samples
- Stay tuned!

General Protein Swabbing is a good supplement

- Cheaper, easier, less sensitive than LFDs
- Not specific (lots of foods have protein)
- Surfaces only

How do I pick a good in-house test?

- Know your team and their capabilities – don't set them up to fail.
- Know your products. Some are easier than others.
- When in doubt: ask!
- Clearly, I'm a little bit biased, but:

GlutenTox®

AlerTox®•Sticks

Thanks for listening! Questions?

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