CLEAN LABEL CONFERENCE

A Food Scientist's Role in Advancing Clean Labels and Sustainable Food Systems

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Clean Label?

History
When did we start to consume so much processed food?

Health
What are the epidemiological consequences of consuming processed foods?

Food Science/Engineering
How do we invent and manufacture clean label, healthy foods and beverages?

Problems With Ingredients?

HFCS - introduced in approx.1975 to answer problems caused by tariffs on sugar imports and encouraged by subsidies for corn farming

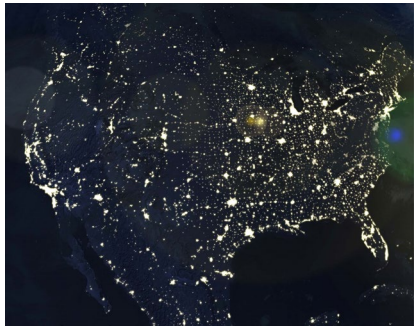
RBD vegetable oils (1930s) – Greatly increased Ω-6 FA intake. Optimal Ω-6:Ω-3 is 4:1; typical is 20:1

Artificial colors (1850s; coal tar colors/azo dyes) – not GRAS, separately regulated

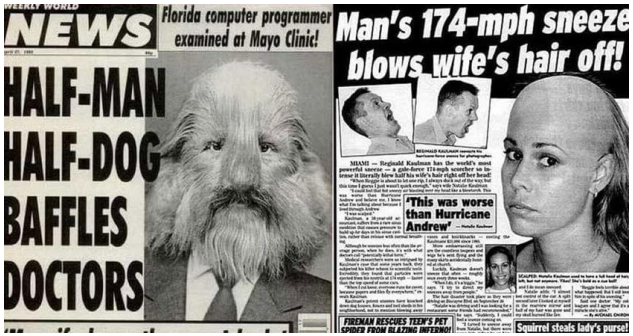
Chemical preservatives (First regulated by FDA in 1958) – potential negative effects on gut microbiome (dysbiosis) – inflammatory /autoimmune diseases?

Problems With Attitudes?

We expect most things to last a really long time – sometimes a good thing, but not always:



It’s a really big country and everything can’t be local



What your customers read on the internet may not be true, but they may believe it

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Practical Ways to Solve the Clean Label Problem

1. Start at the end

2. Always maintain an Overview Perspective

3. Don't solve for problems that don't exist in practice

4. Try to find a 'physical' solution before you look for an ingredient solution

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Let's Start at the Very Beginning, a Very Good Place to Start

- Julie Andrews was wrong
- The best place to start is at the end
- If you can't manufacture it, it's no good to you
- What equipment is available and what are its capabilities?
- Can you add a piece of readily available equipment into the mix to improve the process?
- Is there space/power/piping etc. for the new equipment?
- Can you persuade the plant personnel to do what you want?

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When Being a Drone is Good

- We don't want to be good formulators; we want to be stellar formulators - stars are very high
- Maintain an **overview mentality** at all times
- It's OK to be in the weeds as well, but you always have to be able to see the whole picture – and then some more; practice looking beyond the horizon
- If you can't manufacture it, it's no good to you
- Practice your scientific intuition – imagine it first, then prove it (if necessary)
- Being right can sometimes be wrong

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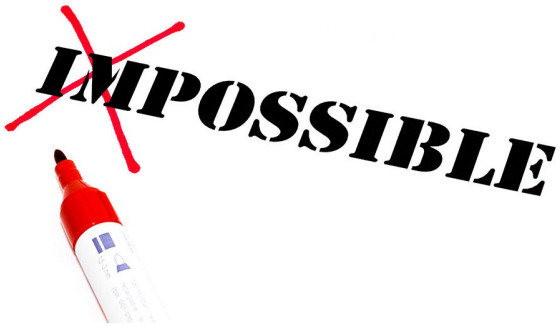
Things That Go Bump in the Night

- Do your homework before you watch a movie
- Let your mind wander
- Don't solve for problems that aren't there
- Avoid using compound ingredients if you can do it more effectively from scratch
- If you can't manufacture it, it's no good to you



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Get Physical

- If ingredients are a problem, then try not to use them
- Can you substitute a physical process for a ‘chemical’ alternative?
- What physical characteristics do you need for optimal performance?
- Hydration can be critical for performance
- Temperature can be critical too
- Order of addition is crucial
- If you can’t manufacture it, it’s no good to you

Thank you

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