

Preventing discolouration of a beverage during storage



Expertise and domain knowledge

- Food and Beverage
- Reformulation
- Applied science
- Regulation
- Market trials
- Packaging





Our client asked:

Our client recently developed a range of fruit-flavoured beverages containing artificial colourings. The drinks were packaged in clear glass bottles, and during storage, it was noticed that they rapidly discoloured when exposed to direct sunlight. Sagentia Innovation was approached to rapidly develop a solution to increase product stability. As it was desirable for the packaging to remain unchanged, the key goal of the work was to identify a simple, regulatory-approved change to the formulation of the products that would have minimal impact on their sensory properties.

The project story:

- The project began with an investigation into the root cause of the instability of the food colourings in the drinks. Scientific and patent literature were reviewed, and the chemical process by which the colourings deteriorated was quickly identified. A brainstorming session was held where a team of Sagentia Innovation's chemists and food scientists developed a list of reformulation options that could potentially address the issue. Our in-house regulatory team reviewed these to identify the options approved for use in the markets the client was planning to distribute to
- We conducted experimental trials to rapidly test the stability of the approved reformulation options, with a bespoke analytical methodology developed to monitor the product discolouration when stored under accelerated shelf-life testing conditions. In parallel, our team of sensory scientists used a trained panel to assess the organoleptic properties of each new formulation, with comparisons made using the original formulation as a standard
- Results from both the analytical and sensory studies were then combined to identify suitable formulations for the beverage

Results: deliverables and outcomes

The project provided the client with several reformulation options for their products that allowed simplistic changes to their existing formulation to be made without the requirement to go through lengthy regulatory approvals. Additional recommendations were also made regarding the product's packaging that could be investigated after the initial launch.

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