Campden BRI
food and drink innovation

Case study: colour stability during shelf life

Lycored

Maintaining colour stability and integrity during shelf life is one of the main challenges for surimi seafood stick manufacturers. Paprika and carmine can be used to colour surimi seafood, but paprika can affect the taste and carmine, which is derived from insects, has a tendency to migrate into the white mass and faces scrutiny by consumers.

Lycored approached us to help with shelf life trials. Our research showed that Lycored's natural colour blends remain stable with little to no migration or fading in surimi seafood sticks for up to three months.

Lycored produce food colourings including Tomat-O-Red, which is made using Lycopene extracted from tomatoes, and Lyc-O-Beta, which is made from beta carotene. Lycored wanted to compare the stability of several different Lycored colours compared with other colouring options.

We developed a method to compare ten different colour blends on the manufactured surimi seafood sticks. These were then stored in chilled conditions and exposed to light levels significantly higher than typical food display conditions - simulating a 'worse case scenario'.

Colour stability and migration was measured using a DigiEye. The DigiEye is a digital imaging system that captures colour calibrated images under standardised lighting conditions.

Blends of Lycored's Lyc-O-Beta and Tomat-O-Red colours remained stable with minimal to no migration in the surimi seafood sticks for at least 66 days, and in some cases over 90, whereas the carmine and paprika samples all changed in colour and showed visible migration within 31 days.

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