



Allied Biotech Corporation
The Carotenoid Company

Replacement of artificial colorants with carotenoids

In July 2008 the European Parliament adopted a legislative package that mandates products containing any of the following six artificial colorants to be labeled with a health warning for children:

Tartrazine (E102)
Quinoline Yellow (E104)
Sunset Yellow (E110)
Carmoisine (E122)
Ponceau 4R (E124)
Allura Red (E129)

By January 2010 foods containing any of these colorants must bear the labeling:

"may have an adverse effect on activity and attention in children".

Large manufacturers have already published their intentions to reformulating their products accordingly and it is foreseeable that this trend will expand beyond the borders of the EU countries.

Carotenoid colours are excellent candidates to replacing most of the artificial colorants in question. Additionally they also provide vitamin A (Pro-vitamin A) and serve as physiological antioxidants in the human organism.

Allied Biotech Corporation has conducted lab trials with our own carotenoid formulations (*Altratene*[®]), which provide food manufacturers with good starting points in their future quest to replacing artificial colorants:

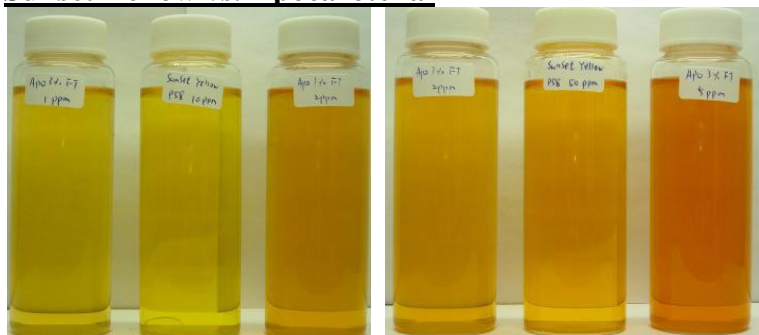
Tartrazine vs. Beta-carotene



Altratene[®] 10% FT-Yellow (1 ppm)
Tartrazine (5 ppm)
Altratene[®] 10% FT-Yellow (5 ppm)



Sunset Yellow vs. Apocarotenal



Apocarotenal 3% FT® (1 ppm) **Apocarotenal 3% FT®** (2 ppm)
Sunset Yellow (10 ppm) Sunset Yellow (50 ppm)
Apocarotenal 3% FT® (2 ppm) **Apocarotenal 3% FT®** (5 ppm)

Ponceau 4R vs. Apocarotenal



Apocarotenal 3% FT® (10 ppm) **Apocarotenal 3% FT®** (20 ppm) **Apocarotenal 10% EM®** (5 ppm)
Ponceau 4R (20 ppm) Ponceau 4R (50 ppm) Ponceau 4R (20 ppm)
Apocarotenal 3% FT® (20 ppm) **Apocarotenal 3% FT®** (50 ppm) **Apocarotenal 10% EM®** (10 ppm)

Allura Red vs. Apocarotenal



Apocarotenal 3% FT® (10 ppm) **Apocarotenal 3% FT®** (20 ppm)
Allura Red (20 ppm) Allura Red (50 ppm)
Apocarotenal 3% FT® (20 ppm) **Apocarotenal 3% FT®** (50 ppm)

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