

Colors

Colors are used in foods to improve the appearance and thus also influence the perception of texture as well as taste. The colours are permitted additives in beverage to provide different shades and improve the aesthetic quality of beverages. Food colours are added in beverages for following reasons:-

1. To give attractive appearance to foods
2. For product identification as majority of fruit beverages are characterized by the colour of fruit which is used in its formulation
3. Intensification of the colour naturally occurring in fruits & vegetables
4. To ensure uniformity of the colour due to natural variations in colour intensity because of variation in harvesting period, variety etc.
5. Colours also give quality assurance during the production and storage.

Various compounds which are used as additive for colouring purpose may be categorized into three groups;

Natural colours,

Nature identical colours

Synthetic colours or dyes.

Natural colours

These colours are obtained from the natural sources and are exempted from regulatory authorities. These are alternatives to artificial colourings and being of natural origin these are highly preferred by consumers as well. The extraction of these colouring pigments is cost-effective and they are low in stability therefore major challenge in usage of natural colours.

Compounds	Source	Colour Impart
Paprika	<i>Capsicum anum</i>	Red colour
Anthocyanin (cyaniding,petunidin, betacyanin)	Beet root, Pomegranate, grape skin	Blue, Purple and pink
Bixin (Annato extract)	<i>Bixa orellana</i>	Yellow colour
Cochineal	<i>Coccus cacti</i>	Orange to Red
Curcumin	<i>Curcuma longa</i>	Orange yellow
Crocin & Crocetin	<i>Crocus sativus</i>	Yellowish red
Caramel	Heated sugar solution	Chocolate Brown

Natural colours

Nature identical colours

These colour compounds are chemically similar to naturally occurring compounds but are extracted using solvents. These are relatively more stable than natural ones. These include β -carotene, apocarotenal (β -apo-8,- carotenal) which are yellow to orange, canthaxanthin that impart red colour and riboflavin provides greenish yellow colour to yellow colour. Mostly these are available in oil-soluble forms and stability of these colourants is a major problem.

Synthetic colours

These are certified food colours. These dyes are water soluble and relatively stable under wide range of pH, processing temperature and storage.

These dyes are usually called as coal tar dyes. Azo dyes are brighter in colour and of high tinctorial strength.

Initially there were 11 permitted synthetic dyes but now three of them have been omitted due to safety concerns. The permitted dyes are carmosine (Red), Sunset yellow FCF (Red), Ponceau 4R (Red),Tartrazine (Lemon yellow), Erythrosine (Pink to Blue), Brilliant blue FCF (Green blue),Indigo carmine(Deep blue), Fast green FCF (Turquoise).

The three dyes which have been removed from the list are Amaranth, Fast Red E and Green S