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Cactus Pear as Colorants and Coloring Foods: Application in Different Food Matrices

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Abstract

Food color is one of the most important attributes related to consumer acceptance. The growth in consumer trends for the preference of healthy food colorants, clean-label foods, and attractive appearance, among other factors, has driven the global market of natural colorants to rise in recent years. Cactus pear fruits (*Opuntia* sp.) are a good source of betalains, which are natural pigments that cover a wide range of colors: from red-purple betacyanins to yellow-orange betaxanthins, with each species possessing different pigments and contents. Betalains are water-soluble pigments and could replace artificial colors in food, many of which have been questioned as harmful for health. The extraction, stability, and application of pigments has recently received particular attention due to their appeal as a natural ingredient. Furthermore, they come from a species with a low water requirement, which is increasingly appreciated in the face of climate change that is affecting the planet. This chapter analyses the variation of betalain content according to the *Opuntia* species and the different types of colorants obtained from colored cactus pears, concentrated pulp and juices, coloring foods (a new concept introduced by the EU legislation), powders, microparticles, among others. The stability of betalains, a critical factor for their successful use in foods, depends both on the form the pigment is applied (i.e., as concentrated juice or microencapsulated) and on the food matrix in which it is applied. Although there are still many food matrices in which their application has not been studied there are forms of colorants that are sufficiently stable to be used in a variety of products. They are more stable in yogurt type matrices than in soft drink type matrices, with yellow-orange pigments also showing more stability than red-purple ones. Thus, a new source of natural pigments is making its way into a market that increasingly values healthy and environmentally friendly ingredients.

Keywords

Food colorants

Coloring foods

Betalains

Betacyanins

Betaxanthins

Pigment application in foods

Cite this chapter

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