

Separation of the Pigment of an Amaranth

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Abstract: It is known that current quality requirements require the utilization of natural colorants in the foods. The objective of the present work is to extract the pigment amaranthus from fresh leaves of *Amaranthus hypochondriacus* L. cv Don Pedro to characterize it through spectroscopic techniques, to be used as natural colorants.

Introduction

Historically, the tinted amaranth has been used to extract the coloring matter, which is soluble in water and was used for the dyeing of drinks, food and other products in Mexico, Bolivia and Ecuador (Sauer, 1950). In India and Mexico the women used the amaranth juice as facial rouge (Ruxton, 1861).

The obtainment of coloring matter based on natural products is of considerable importance since the United States have banned the use of synthetic coloring in foods. Thus, the tinted amaranth is of interest due to the fact that dyes for food which are not artificial are needed.

The typical pigment of the tinted amaranth is called "amaranthine"; it belongs to the group of the betacyanines (Mabry and Dreiding, 1968) and was identified as 5-O-[2-O-(β -D-glycopyranosyluronic acid) β -D-glucopyranoside] of the betanidine (Piatelli et al. 1964) and (Piatelli and Minale, 1966), the betanine have been used as colorants in many types of food (Von Elbe, 1977).

The factors which affect the stability of the pigment are pH, temperature, light, oxygen, activity in water (von Elbe et al. 1974. Sapers and Hornstein, 1979. Pasch and von Elbe, 1979. Sttoe and von Elbe, 1982).

The amaranth studied, *Amaranthus hypochondriacus* L. cv. Don Pedro has its pigment "amaranthine" distributed all over the plant, this pigment is extracted from fresh leaves and characterized by spectroscopic techniques, for its possible application in the colouring of drinks and food at an industrial level.

Experimental

The green vegetable material collected was kept in freezer at -15°C , during 48 hours, then the

leaves were whitened, ground and extracted with water. Aliquots of the extract obtained were chromatographed over columns of Sephadex G-25 (Pharmacia K 100/100) and then over one column of Amberlite XAD-7. The colored fraction was separated in column of Sephadex LH20, using MeOH as solvent (elution). Although fractions enriched by the colorant were obtained, due to their scarce amount, they were not enough to perform spectroscopic determinations.

References and Notes

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