

DETECTION OF 1-AMINO -2-NAPHTHOL-BASED AZO DYES (ILLEGAL SUDAN DYES) IN SOME EGYPTIAN FOOD PRODUCTS

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ABSTRACT

One hundred random samples of chilli products and other related foods either local or imported (spices, mixtures of spices, tomato sauces, dressing, crisps, oils ,pickles and sausages) were collected from retail Egyptian market and analyzed for the presence of Sudan dyes by HPLC procedure . Sudan dyes have been found in a large number of food products samples containing contaminated chilli powder. The prevalence of illegal dyes were detected in a very high percentage of food products out of one hundred samples tested, more than forty five samples were found to contain detectable levels of illegal dyes. Sudan I (Sudan Red) was found as a highest ratio in red hot chilli powder (220 mg/kg), also Sudan IV (Scarlet Red) was achieved the highest ratio (1120 mg/kg) in the another chilli powder sample and 326 mg /kg for Sudan II in paprika . Sudan III was detected as the highest ratio in Indian Curry paste sample(165 mg/kg) .

Keywords: Sudan dyes- Spices- Chilli powder- HPLC.

INTRODUCTION

Sudan I, II, III and IV are industrial dyes normally used for coloring plastics and other synthetic materials. Next to Sudan I-IV, Para Red, Butter Yellow, Sudan Red B and Sudan Orange G belongs to the group of azo dyes. Sudan dyes are fraudulently used to enhance the color of the food. Chilli powder is a common spice ingredient used by the food manufacturing industry in the formulation of a wide range of products, especially for oriental dishes, curries, sauces and pickles. The quality of individual batches of chilli powder, which in many cases dictate their economic value, is often arbitrarily judged by the brightness, purity and intensity of the spices color. So, certain irresponsible traders, add synthetic colorants to their spices to improve the appearance, apparent quality and freshness of their products. Several incidents have been reported within Europe, notably in early summer 2003 and 2005 (*Food Standards Agency information,2005*) where imported chilli powders and derivative foods were found to be adulterated with the Sudan dyes or related colorants. In the case of chilli and chilli products, the contamination was traced back to adulterated chilli powder. The price of chilli powder is largely linked to the intensity of the color and its maintenance so, it was suspected that Sudan I was fraudulently used to enhance and maintain the color of the product.. The European Commission extended controls for the dyes to include imports of curcuma and virgin palm oil as well as chilli and chilli products.