

Evaluation of ISO Method in Saffron Qualification

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The factors which are very important in saffron are crocin (color), picrocrocin (flavor) and safranal (aroma). Higher amount of these compounds in saffron provide higher quality of saffron. ISO (the International Organization for Standardization) has set a classification of saffron based on minimum requirements of each quality. According to ISO picrocrocin, safranal and crocin are expressed as direct reading of the absorbance of 1% aqueous solution of dried saffron at 257, 330 and 440 nm, respectively. There was some doubt about the accuracy of the safranal result using ISO method. Therefore, it was decided to evaluate the amounts of safranal and crocin in saffron according to ISO method and compare the results with the amounts of these compounds when using high performance liquid chromatography (HPLC). In HPLC method in an isocratic run a 30 cm ODS column were used. Mobile phase was mixture of acetonitrile and water (76:26 v/v). A UV detector at wavelengths of 330 nm for safranal and 440 nm for crocin was also employed. Results indicated that standard crocin had significant absorption at 330 nm. We concluded that present ISO method is not an accurate method to measure the amount of safranal in saffron. Therefore, it is suggested to evaluate this method and meanwhile using a HPLC method to evaluate the amount of safranal and crocin in saffron samples.

Keywords: Saffron, quality, ISO method.