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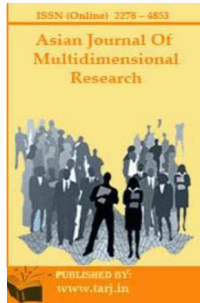
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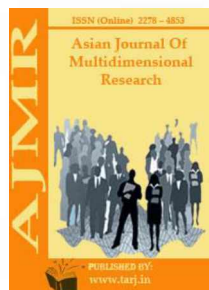
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CREATING A METHOD FOR DETERMINING THE AMOUNT OF AMINO ACIDS IN THE SOWN SAFFRON PLANT– *CROCUS SATIVUS L*

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ABSTRACT

*In this article, a method of high-performance liquid chromatography (HPLC) was developed to determine the amount of amino acids in the material of the medicinal plant *Crocus Sativus L*-sown saffron plant, cultivated in Uzbekistan. According to the results, 20 free amino acids were found in the material of *Crocus Sativus L*-saffron, of which cysteine, tyrosine, valine, and phenylalanine free amino acids significantly more than the remaining amino acids.*

KEYWORDS: *Crocus sativus L., aminoacids, analisis, method of analisis, medicinal drug, raw material.*

INTRODUCTION

According to the World Health Organization, more than 60% of the available drugs are drugs derived from the raw materials of medicinal plants. Because they are high quality, economically inexpensive, have few side effects on the human body [3].

Therefore, in recent years, our Government has been paying great attention to the creation of industrial plantations of medicinal plants and obtaining from them drugs and biologically active supplements (BAS). An example of this is the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated August 21, 2013 No EDO-03 / 1-421 "On measures to establish

saffron (saffron) plantations in the country, to meet the needs of the pharmaceutical industry and to organize the reproduction of export-oriented medicinal plants". In order to ensure the implementation of this decision, in accordance with the decision of the Cabinet of Ministers of August 21, 2013, the 114th meeting of the "SHAFRAN" LLC was established.

Abroad, saffron-derived drugs and biologically active (BAS) supplements are widely used to improve liver function, boost immunity, in addition to treating strong cancers, brain activity, memory, urinary tract, mental, inflammatory stress diseases [6]. The medicinal plant saffron (*SROCUS SATIVUS L*) grown in UZBEKISTAN contains 26 biologically active substances. [5] Microbiological purity has been studied in pre - clinical trials [4, pp. 214-219; 6, pp. 68-71].

In recent years, with the development of the detection of biologically active substances in medicinal plants, the study of free amino acids in them has become widespread. The spectrum of pharmacological effects of amino acids on the human body is wide and enhances the effectiveness of other substances in the body [1,2, pp. 74-77].

The purpose of the study. Development of a method for determining the amount of free amino acids in the raw material of the medicinal plant *Crocus sativus L*-Saffron (Ekma saffron), cultivated in Uzbekistan.

Object of research and method. *Crocus sativus L* -Saffron (Ekma saffron) plant raw material grown in Uzbekistan, high-efficiency liquid chromatography (USSX) method.

The proteins and peptides in the aqueous extraction of the samples are precipitated and 1 ml of the supernatant portion is taken, 1 ml of 20% TCA (trichloroacetic acid) is added to it, and after 10 minutes, centrifuged for 15 minutes at 8000 rpm. 0.1 ml of the residual liquid is dried in a lyophilic dryer.

Analysis of free amino acids was performed by the method of phenylthiocarbomyl (FTK) synthesis Steven A, Cohen Daviel [7, pp. 1-16].

FTK amino acid identification UV-detector, Agilent Technologies 1200 chromatograph uses a stationary phase 75x4.6 mm Discovery HS C18 column, as a moving phase a mixture of 0.14M CH₃COONa + 0,05% T₃A pH 6,4 and CH₃CN.

Flow rate 1.2 ml per minute, absorption 269 nm. Gradient% B / min: 1-6% / 0-2.5 min; 6-30% / 2.51-40 min; 30-60% / 40.1-45 minutes; 60-60% / 45.1-50 min; 60-0% / 50.1-55 min. The amount of free amino acids detected in the plant composition is shown in Table 1, chromatography in Figures 1 and 2.

TABLE 1 *CROCUS SATIVUS L* - AMINO ACID CONTENT OF SAFFRON (SAFFRON) RAW MATERIAL (MG / G)

№	Amino acids	<i>Crocus sativus L</i> -Saffron (sown saffron) plant
		(mg/gp)
1	Asparagine acid	0,430934
2	Glutamic acid	0,697983
3	Serin	0,740963
4	Glycine	0,677594
5	Asparagin	0,722892

6	Glutamine	1,251014
7	Tsistein	2,757732
8	Treonin	1,013514
9	Argenin	0,928588
10	Alanin	0,332815
11	Prolin	0,346611
12	Tyrosine	2,072204
13	Valin	1,429123
14	Methionine	1,215824
15	isoleucine	1,419956
16	Leitsin	1,068996
17	Gistidin	1,080395
18	Tryptophan	1,111631
19	Phenylalanine	1,602467
20	Lysine HCl	0,787783
21	Total	21,68902

According to the results of Table 1, *Crocus sativus L* - sown saffron plant raw material contained 20 free amino acids, of which cysteine, tyrosine, valine, and phenylalanine were significantly more than the amino acids.

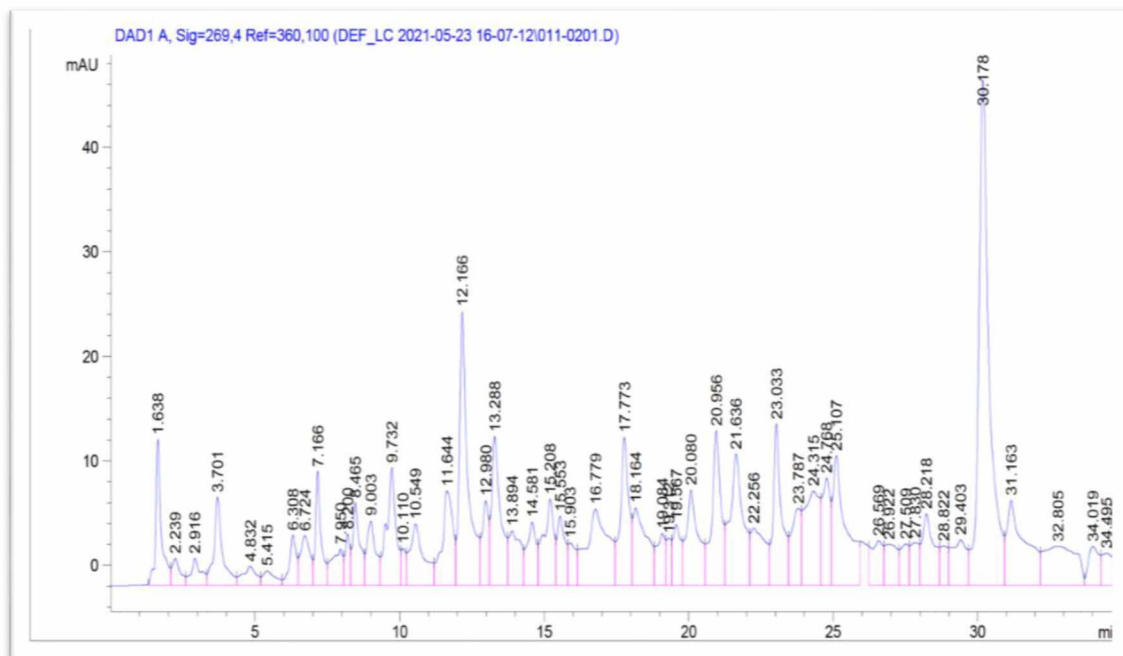


Figure 1 *Crocus sativus L* - Chromatogram of amino acids in the raw material of the saffron plant

CONCLUSION

Crocus sativus L - High-efficiency liquid chromatography (HELIC) method for determining the amount of amino acids in the raw material of the plant saffron (Saffron) was developed.

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