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Medicinal Plants

Journal of Medicinal Plants

Proceeding

2



10th National Congress on Medicinal Plants

12 & 13 July 2023

Urmia, Iran

JOURNAL OF MEDICINAL PLANTS

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10th National Congress on Medicinal Plants
12 & 13 July 2023
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Owner & Publisher: Institute of Medicinal Plants, ACECR

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P.O.Box: 13145-1446
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**10th National Congress on
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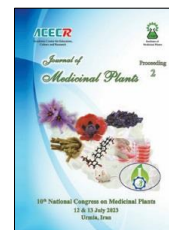
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National Research and Technology
Network of Medicinal Plants

10th National Congress on Medicinal Plants

12 & 13 July 2023
Urmia, Iran



Poster Presentation ID: 11

Impact of ACCase Inhibitor Herbicides on Saffron (*Crocus sativus* L.) Yield

Hamid-Reza Fallahi^{1*}, Mohammad Ali Behdani², Hossein Hammami², Seyyed Amirhossein Hosseini³, Mahdi Rezghi², Mahsa Aghhavan-Shajari⁴

¹Plant and Environmental Stresses Research Group, University of Birjand, Birjand., Iran

²Department of Plant Production and Genetics, University of Birjand, Birjand, Iran

³Department of Agronomy and Plant Breeding, University of Tehran, Tehran, Iran.

⁴Department of Agrotechnology, Ferdowsi University of Mashhad, Mashhad, Iran

E-mail: Hamidreza.fallahi@birjand.ac.ir

ARTICLE INFO

Keywords:

Fatty acid

Gas chromatography

Vegetable oils

Non-polar column

Peak separation

ABSTRACT

Saffron (*Crocus sativus* L.) is a weak competitor against weeds due to its leaf structure and low leaf area index. Therefore, weed control is an important practice to improve its flowering capacity [1]. In this regard a field experiment was carried out at the research field of university of Birjand to investigate the effect of different weed control methods on saffron reproductive growth parameters. The experiment was performed based on a randomized complete block design, during 2019. Corm planting (using corms with ~ 6g weight, density of 50 corms per m² and planting depth of 20 cm) was done in September 2016, then when the field was two-year old (February 2018) experimental treatments (Table 1) were applied. At the start of the next flowering season (November 2019) saffron flowers were harvested and counted daily. Then mean flower weight and length were determined. In addition, stigmas and petals were dried at shade (~25 °C) for a week and then their yields were measured. All weeds control treatments especially mechanical method (by hand) improved significantly stigma and petal yields. The best concentrations of Sethoxydim and Cletodim were 4.5 and 1 L ha⁻¹, respectively (Table 1). According to photodegradation and biodegradation of Sethoxydim and Cletodim in environment, it seems that this herbicide have potential to be used in saffron fields [2]. Overall, hand weeding was the best method of weed control in saffron field, but all concentrations of both used herbicides were also useful. However, it is recommended to evaluate these herbicides at the low levels prior to their widespread application in the fields.

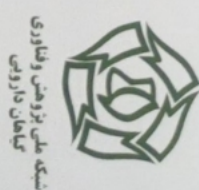
Table 1. Effect of weed control treatments on saffron flowering parameters

Weed controlling treatments	Concentration (L ha ⁻¹)	Number of flower per m ²	Mean flower weight (g)	Mean flower length (cm)	Stigma dry yield (kg.ha ⁻¹)	Petal dry yield (kg.ha ⁻¹)
Control	-	23.0 ^d	0.37 ^b	4.86 ^a	1.11 ^c	05.91 ^d
Hand weeding	-	57.0 ^a	0.38 ^b	5.08 ^a	3.25 ^a	17.40 ^a
Sethoxydim (Nabo-S)	1.5	31.5 ^{bcd}	0.38 ^b	4.82 ^a	1.55 ^{bc}	10.51 ^{bc}
	3	31.0 ^{bcd}	0.38 ^b	4.54 ^a	1.56 ^{bc}	10.78 ^{bc}
	4.5	41.6 ^b	0.41 ^{ab}	4.89 ^a	2.18 ^b	14.51 ^{ab}
	0.5	40.1 ^{bc}	0.36 ^b	4.86 ^a	1.60 ^{bc}	13.01 ^{ab}
Cletodim (Select super)	1	40.0 ^{bc}	0.39 ^{ab}	4.94 ^a	1.78 ^{bc}	12.38 ^b
	1.5	26.0 ^{cd}	0.43 ^a	4.85 ^a	1.46 ^{bc}	6.80 ^{cd}

In each column, mean with similar letters are not significantly different based on FLSD test.

References

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دهمین کنگره ملی گیاهان دارویی

۲۱ و ۲۲ تیر ۱۴۰۲ - ارومیه

10th National Congress on Medicinal Plants

گواهی می شود مقاله با عنوان:

Impact of Grassidal Herbicide Using on Saffron (*Crocus sativus* L.) Yield

ارسال شده توسط حمیدرضا فلاحي، محمدعلي بهداني، حسين حماني، سيد امير حسين حسيني، مهدي رزقي،

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در دهمین کنگره ملی گیاهان دارویی که در تاریخ ۲۱ و ۲۲ تیر ماه ۱۴۰۲ توسط شبکه ملی پژوهش و فناوری گیاهان دارویی با مجوز پایگاه استادی علوم جهان اسلام (ISC) و کد اختصاصی ۳۱۷۲۲-۰۳۲۳۰ در دانشگاه ارومیه برگزار گردید، به صورت پوستر ارائه شده است.

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