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**INOPTEP 2023**

# **BOOK OF ABSTRACTS**

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AND FOOD TECHNOLOGIES  
INOPTEP 2023**

and

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## SAFFLOWER AS AN ALTERNATIVE OIL CROP - POTENTIAL IN THE PET NUTRITION

Olivera ĐURAGIĆ<sup>1</sup>, Slađana RAKITA<sup>1</sup>, Marija MILAŠINOVIĆ ŠEREMEŠIĆ<sup>1</sup>, Bojana KOKIĆ<sup>1</sup>,  
Strahinja VIDOSAVLJEVIĆ<sup>1</sup>, Ana MARJANOVIĆ JEROMELA<sup>2</sup>

<sup>1</sup>University of Novi Sad, Institute of Food Technology in Novi Sad, Bulevar cara Lazara 1, Novi Sad, Serbia

<sup>2</sup>Institute of Field and Vegetable Crops, Maksima Gorkog 30, Novi Sad, Serbia

Contact: olivera.djuragic@fins.uns.ac.rs

Safflower (*Carthamus tinctorius L.*) is an annual plant from the *Composite family*. The resistance to climatic conditions, lack of water, and increased soil salinity makes a valuable alternative oil crop that has gained importance in recent years. Safflower is a significantly cheaper variant of the related culture of saffron, which use can be higher in human and animal nutrition, the textile and dye industry, biodiesel production, etc. Safflower can be said to be a "climate-smart" crop that can adapt to changing environmental conditions thanks to its rich genetic diversity. Effective implementation of support policies in technology, appropriate incentives, and marketing, especially in countries facing water deficits and changing soil quality, has significant potential for improving food security and the income and livelihoods of people engaged in agriculture. Safflower contains 90% of total unsaturated fatty acids, of which 14% are monounsaturated (MUFA) and 76% are polyunsaturated (PUFA). Among the n-6 fatty acids, the main ingredient is linoleic acid, which accounts for 74% of the total fat content. The use of safflower in animal nutrition dates back to the 1980s of the last century. The results of feeding animals with safflower show that it is a palatable and acceptable source of protein and fiber, with yields similar to or even better than oats or alfalfa. Safflower pastures have also shown that feeding ruminants with this plant contribute to better growth and higher fertility of animals. However, there are very few investigations of the evaluation of safflower oil and cake in the nutrition of animals, especially pets. The use of safflower seeds in the diet of ornamental birds (parrots, canaries, etc.) is widely known as an ingredient that improves the quality and shine of feathers. In this regard, it could be assumed that have the same effect on the skin and hair of pets, which has been confirmed in research related to the use of safflower oil in human nutrition. Also, numerous data from experts in the field of pet nutrition showed the positive effects of this oil as an ingredient in the diet of dogs and cats, not only in the domain of skin and hair health but also for the structure of the cell membrane, cell function, as well as for healthy reproduction, growth, a strong heart, and immunity.

**Key words:** *pet food, safflower oil, safflower cake*

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## ŠAFRANIKA KAO ALTERNATIVNA ULJANA KULTURA – POTENCIJAL U ISHRANI KUĆNIH LJUBIMACA

*Olivera ĐURAGIĆ<sup>1</sup>, Slađana RAKITA<sup>1</sup>, Marija MILAŠINOVIĆ ŠEREMEŠIĆ<sup>1</sup>, Bojana KOKIĆ<sup>1</sup>,  
Strahinja VIDOSAVLJEVIĆ<sup>1</sup>, Ana MARJANOVIĆ JEROMELA<sup>2</sup>*

*Univerzitet u Novom Sadu, Naučni institut za prehrambene tehnologije u Novom Sadu, Bulevar cara Lazara  
1, Novi Sad, Srbija*

*Institut za ratarstvo i povrtarstvo –Institut od nacionalnog značaja za Republiku Srbiju, Maksima Gorkog  
30, Novi Sad, Serbia*

*Kontakt:olivera.djuragic@fins.uns.ac.rs*

Šafranika (*Carthamus tinctorius* L.) je jednogodišnja biljka iz porodice Composite, otporna na klimatske uslove, nedostatak vode i povišen salinitet zemljišta. Upravo to je svrstava u vrednu alternativnu uljanu kulturu koja dobija na značaju poslednjih godina imajući u vidu njenu otpornost na pomenute faktore. Šafranika predstavlja znatno jeftiniju varijantu srodne kulture šafrana i njena upotreba može biti značajno veća u ishrani ljudi, životinja, u tekstilnoj industriji i industriji boja, proizvodnji biodizela i sl. Za šafraniku se može reći da predstavlja “klimatski pametan” usev koji se može prilagoditi promenljivim uslovima životne sredine zahvaljujući svojoj bogatoj genetskoj raznovrsnosti. Efikasna primena politika podrške u tehnologiji, odgovarajućim podsticajima i marketingu od strane države naročito u zemljama koje se suočavaju sa deficitom vode i promenom kvaliteta zemljišta, ima značajan potencijal za poboljšanje bezbednosti hrane i poboljšanje prihoda i sredstava za život ljudi koji se bave ratarstvom. Šafranika sadrži 90% ukupnih nezasićenih masnih kiselina od čega je 14% mononezasićenih (MUFA) i 76% polinezasićenih (PUFA). Među n-6 masnim kiselinama, glavni sastojak je linolna kiselina koja čini 74% od ukupnog sadržaja masti. Upotreba šafranike u ishrani životinja datira još od 80-tih godina prošlog veka. Rezultati ishrane životinja sa šafranikom pokazuju da ona predstavlja ukusan i prihvatljiv izvor proteina i vlakana, sa prinosima koji su slični pa čak i bolji od ovasa ili lucerke. Pašnjaci šafranike su takođe pokazali da ishrana preživara ovom biljkom doprinosi boljem prirastu kao i plodnosti životinja. Međutim, postoji veoma mali broj radova o upotrebi ulja i pogače šafranike u ishrani životinja, naročito kućnih ljubimaca. Opšte poznata je upotreba semena šafranike u ishrani ukrasnih ptica (papagaja, kanarinaca is l), kao sastojka koji poboljšava kvalitet i sjaj perja. S tim u vezi, pretpostavlja se da isti efekat može imati i na kožu dlaku kućnih ljubimaca što je i potvrđeno u istraživanjima vezanim za upotrebu ulja od šafranike u ishrani ljudi. Takođe, brojni saveti stručnjaka u oblasti ishrane kućnih ljubimaca ukazuju na pozitivne efekte ovog ulja, kao izuzetno vrednog sastojka u ishrani pasa i mačaka, ne samo u domenu zdravlja kože i dlake već i za strukturu ćelijske membrane, funkciju ćelije, kao za zdravu reprodukciju, rast, snažno srce i imunitet.

**Key words:** *pet food, šafranika, ulje, pogača*

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