



Federation of European Zeolite Associations

FEZA

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Past FEZA meetings:



8th FEZA conference

NANOPOROUS MATERIALS: From Fundamental Science to Advanced Applications,

was virtual, held on-line 5-9 July 2021. FEZA School on Zeolites was also virtual, held on 1-2 July.

Information about the conference and the school can be found [here](#).



7th FEZA conference

The ZEOLITES: Materials with Engineered Properties,

was held in Sofia, Bulgaria, July 3-7, 2017. Book of Abstracts was printed and distributed. Post-conference FEZA School on Zeolites was held on July 7-9, 2017 in the ancient town of Plovdiv.

Information about the conference and the school can be found [here](#).



6th FEZA conference

Porous Systems: From Novel Materials to Sustainable Solutions,

was held in Leipzig, Germany from 8th to 11th September 2014. Conference website can be accessed [here](#).

Pre-conference school "Hierarchically-ordered Materials: From Theory to Applications" was held on September 5-7.



5th FEZA conference

Innovations in Zeolites and Ordered Porous Solids,

was held in Valencia, Spain, from 3rd to 7th July 2011. Book of abstracts can be downloaded [here](#).

Post-conference 3rd FEZA School on Zeolites was held on 8th and 9th of July. Accompanying book "Zeolites and ordered porous solids: fundamentals and applications" was published and is available online:



Complete list of [FEZA](#)



[members.](#)

[FEZA 2011 Book of abstracts.](#)

Information about the conference and the school can be found at [Conference](#) and [school](#).

4th FEZA conference

"Zeolites and Related Materials: Trends, Targets and Challenges",

was organized by the French Zeolite Group and "Université Pierre et Marie Curie" Paris.

It was held in Paris, France, from 2nd to 6th September 2008.

2nd FEZA school was held at the "Université Pierre et Marie Curie" in Paris, on September 1st and 2nd 2008.

Conference website can still be accessed here:

<http://www.congres.upmc.fr/feza2008/>

Flyer: [FEZA2008](#)

Some information about school: [2nd FEZA school](#)

Book of abstracts can downloaded here: [FEZA 2008 Book of abstracts.](#)



3rd FEZA conference

"Molecular Sieves: from Basic research to industrial applications",

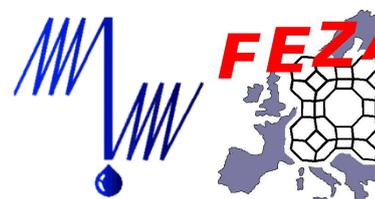
has been held in Prague, Czech Republic, from August 23rd to 26th, 2005.

The conference has been organized by The Czech Zeolite Group and J. Heyrovsky Institute of Physical Chemistry under the auspices of the FEZA.

Proceedings from the conference are collected in "Studies in surface science and catalysis, Vol. 158": [Part A](#) and [Part B](#)

Before the conference, 1st FEZA School on Zeolites was held in Prague on August 20.-21. 2005.

[Zeolites and Ordered Mesoporous Materials: Progress and Prospects](#) reflects the programme of the first School on Zeolites.

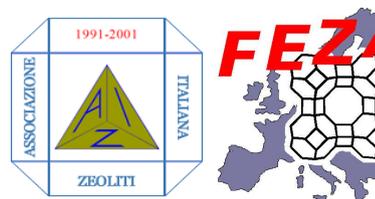


2nd FEZA conference

"Impact of Zeolites and other Porous Materials on the new Technologies at the Beginning of the New Millennium",

was held in Taormina, Italy, from September 1st to 5th, 2002.

The conference was organized by the Italian Zeolite Association under the auspices of the FEZA. Proceedings from the conference are collected in ["Studies in surface science and catalysis, Vol. 142"](#)



1st FEZA conference

"Porous materials in Environmentally Friendly Processes",

was organized in Eger, Hungary, from September 1st to 4th, 1999.

The proposal to organize an International Thematic Conference under the auspices of the FEZA was made by the leading members of the Hungarian Zeolite Association during the FEZA Committee Meeting, held in Budapest in 1998.

The proposal was accepted with enthusiasm by the members of the Committee and the idea about the FEZA conference was successfully realized after one year.

Proceedings from the conference are collected in ["Studies in surface science and catalysis, Vol. 125"](#)

Exhaustive list of conferences relevant to zeolite science can be found

INFLUENCE OF NATURAL ZEOLITE ADDITION ON POTASSIUM AND NITRATE LEACHING FROM DIFFERENT SOIL TYPES

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Introduction

Natural zeolites are a valuable soil supplements and are recognized to have a positive effect in remediation of contaminated soils, agriculture production and retention of water and plant nutrients in the soil (1, 2). Therefore, the aims of this study were to investigate the influence of addition of the natural zeolite - clinoptilolite (NZ) and its iron(III)-modified form (FeZ) on potassium and nitrate leaching from three different types of soils: sandy, silty loam and silty clay soils.

Experimental

The experiments were performed in columns containing unamended (controls) and amended soils. Columns were prepared for each system by manually filling a Plexiglass column (diameter/length: 2.4/30 cm) with soil or with previously homogenized mixture of soil and amendments (NZ/FeZ, or KNO₃). Amounts of the added KNO₃ corresponded to 10 mg N (100 g soil)⁻¹ and 28 mg K (100 g soil)⁻¹ which amounts to 200 kg N and 550 kg K ha⁻¹ soil. The amounts of NZ (0.5 wt.%) and FeZ (0.5 and 1 wt.%) corresponded to about 10 and 20 t zeolite ha⁻¹. At the bottom of each column, a nylon filter covered with PVC balls was placed to prevent the loss of soil. In order to provide an effective distribution of water, the top of each column was covered with the PVC balls. During the leaching experiments the filled columns were saturated and then irrigated with distilled water from the top of the column, at a flow rate of 1.3 ml h⁻¹. All experiments were performed in the absence of light. The concentration of potassium and nitrate in the leachates was monitored during 7 days.

Results and conclusions

The obtained results showed that the potassium and nitrate leaching from the studied soils mainly depends on the soil type. The addition of zeolites had a retention effect toward potassium in the following order: silty loam < silty clay << sandy soil whereas retention effect toward nitrate was obtained only for the silty loam and silty clay soils (silty clay < silty loam). The FeZ exhibited a better retention effect than NZ for which was attributed to the presence of iron(III)-oxide particles on the zeolite surface.

References

- (1) Li, H.; Shi, W.; Shao, H.; Shao, M. J. Hazard. Mater. **2009**, *169*, 1106.
- (2) Colombani, N.; Mastrocicco, M.; Di Giuseppe, D.; Coltorti, M. Catena. **2015**, *127*, 64.

Acknowledgments

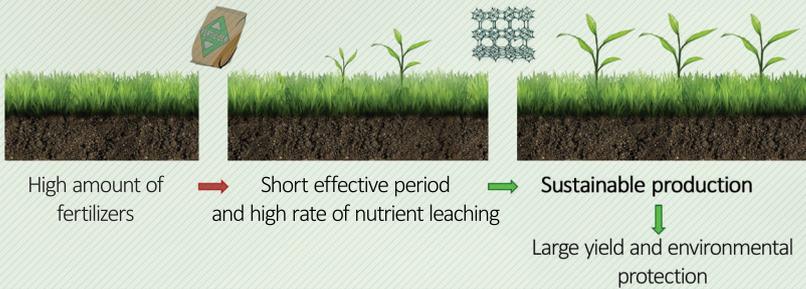
The authors gratefully acknowledge the financial support of Ministry of Education, Science and Technological Development of the Republic of Serbia (Project No. 172018) and HERD project financed by the Norwegian Ministry of Foreign Affairs (Project Reference No. 332160 UP).

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INTRODUCTION

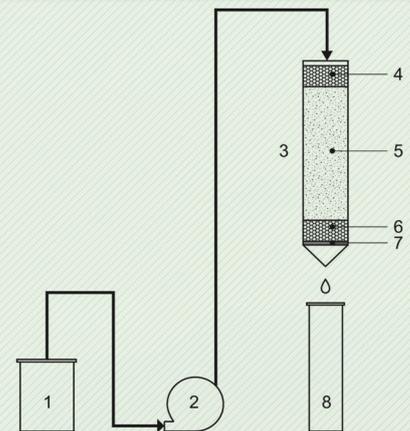


- Natural zeolites are valuable soil supplements. They have a positive effect in remediation of contaminated soils, agriculture production and retention of water as well as plant nutrients in the soil.
- The aims of this study were to investigate the influence of addition of the natural zeolite - clinoptilolite (NZ) and its iron(III)-modified form (FeZ) on potassium and nitrate leaching from three different types of soils: sandy, silty loam and silty clay soils.

EXPERIMENTAL

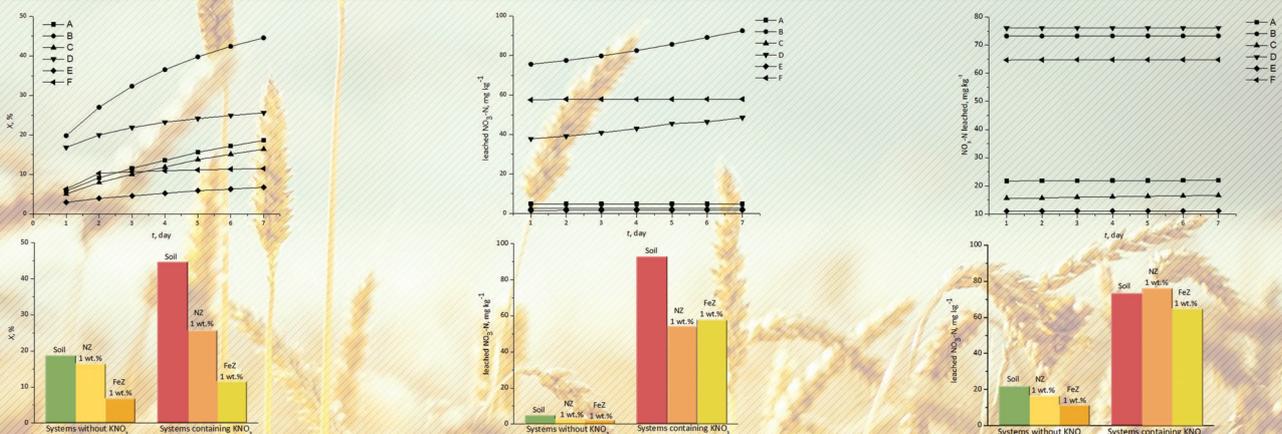
- The experiments were carried out in columns organized in experimental systems containing unamended and amended soils.
- The amount of added KNO_3 corresponded to $10 \text{ mg N (100 g soil)}^{-1}$ and $28 \text{ mg K (100 g soil)}^{-1}$ which amounts to 200 kg N and 550 kg K ha^{-1} soil.
- The amount of NZ and FeZ (1 wt.%) corresponded to about $20 \text{ t zeolite ha}^{-1}$. After filling the columns, they were saturated and then irrigated with distilled water, at a flow rate of 1.3 ml h^{-1} during 7 days.

| System | Component | Component | Component |
|--------|-----------|-----------|-----------|
| A | Soil | — | — |
| B | Soil | KNO_3 | — |
| C | Soil | — | NZ |
| D | Soil | KNO_3 | NZ |
| E | Soil | — | FeZ |
| F | Soil | KNO_3 | FeZ |



The experimental setup for leaching experiments: 1. water tank; 2. peristaltic pump; 3. plexiglass column; 4. PVC balls; 5. soil or soil/FeCl₃ mixture; 6. PVC balls; 7. PVC filter; 8. sample collector.

RESULTS



CONCLUSION

- Leaching of the potassium and nitrate from the studied soils mainly depends on the soil type.
- Retention effect of NZ and FeZ toward potassium is as follows: silty loam < silty clay << sandy soil.
- Retention effect of NZ and FeZ toward nitrate was obtained only for the silty loam and silty clay soils as follows: silty clay < silty loam.

Acknowledgments

The authors gratefully acknowledge the financial support of Ministry of Education, Science and Technological Development of the Republic of Serbia (Project No. 172018) and HERD project financed by the Norwegian Ministry of Foreign Affairs (Project Reference No. 332160 UP).