



Porject title: ***The use of natural zeolite
(clinoptilolite) for
the treatment of farm
slurry and as a fertilizer carrier***

Short report

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Participants

- **Norwegian University of Life Science** (Department of Plant and Environmental Sciences) and Tore Krogstad as head of the project.
- **University of Belgrade** (Faculty of Agriculture and Faculty of Technology and metallurgy) and Vesna as project leader for Balkan countries.
- **University of Sarajevo** (Faculty of Agriculture and Food Sciences) and Senija Alibegović-Grbic, project leader for Bosnia part of the project.

The aim of the project

As natural zeolites can retain ammonia absorbed from slurry, the aim was to investigate the feasibility of zeolites and zeolite based fertilizer (ZBF) usage.

- ZBF has several advantages
- non-toxic natural material;
 - an easy application at the beginning of the vegetation period;
 - fertilizing effect through the longer period;

Reserch and results in B&H

- The field experiment was established near Kakanj on semi-natural grassland.
- Folowing variants were included: 1.control (no treatment), 2. zeolite (3 t ha^{-1}), 3. organic manure (30 t ha^{-1}), 4. mixture of organic manure and zeolite ($30\text{ t ha}^{-1} + 3\text{ t ha}^{-1}$) mixed, and 5. mineral N.
- There were examined: DM yield, protein yield and botanical composition.
- In total, the best result in total (19.41 t ha^{-1}) was obtained by application mineral N.
- The second best yield (18.43 t ha^{-1}) was achieved by application of organic manure treated with zeolite
- The least DM yield (16.77 t ha^{-1}) was given by application of pure zeolite (perhaps, it could be explained by binding available N from soil by zeolite).
- Similar results were for protein yield.
- In 2014 were noted more legumes in grass sward, generally, but the highest portion (32,3 %) was found in treatment with 30 t/ha organic manure and the least (7 %) by N application.

