Contribution ID: **325** Type: **Poster (+) Presentation**

Targeted delivery of fertilizer in coarse textured soils using foam as carrier

Tuesday, 1 June 2021 10:00 (1 hour)

Agrochemicals and fertilizers are central to modern agriculture and are credited with the large increase of crop yield as part of the Green Revolution of the 1960's. Timely and targeted fertilizer application is an important component for reducing costs and minimizing unintended release to the environment and water resource pollution. The efficiency of highly mobile fertilizers (i.e., nitrate) is affected by drainage and preferential flow pathways that bypass root bearing soil volumes. We report a novel liquid fertilizer delivery method using foam as carrier. The highly controlled transport of foam (defined as a dispersion of gas in a continuous liquid phase) in coarse soils (most susceptible to unstable flows) offers a means for targeted delivery to desired root zone volumes at concentrations and floe geometry that minimizes losses and promote its uptake. As proof of concept we conducted transport experiments in cylindrical soil columns using foam and conventional fertilizer application. Our results show that foam-assisted fertilizer application decreased the leaching of fertilizer and improved its retention in the soil column potentially offering a vehicle for fertilizer delivery in soil.

Time Block Preference

Time Block A (09:00-12:00 CET)

References

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Primary authors: SHOJAEI, Mohammad Javad (Imperial College London); Prof. OR, Dani (Division of Hydrologic Sciences (DHS) - Desert Research Institute, Reno, NV, USA ETH Zurich, Department of Environmental Systems Science (D-USYS), Zurich, Switzerland); Prof. SHOKRI, Nima (Hamburg University of Technology, Institute of Geo-Hydroinformatics, Hamburg, Germany)

Presenter: SHOJAEI, Mohammad Javad (Imperial College London)

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