Organic Amendment, Decomposition, Nutrient Release and Uptake by Millet in a Traditional Land Rehabilitation Technique (Zai) in the Sahel. (S04-martius094139-Poster)

Authors:

- D.Fatondji - *ICRISAT Sahelian Center, Niamey, Niger*
- C.Martius - *Center for Development Research (ZEF Bonn)*
- P.L.G.Vlek - *Center for Development Research (ZEF Bonn)*

Abstract:

In the Sahel, land is heavily degraded through erosion, nutrient mining and over-exploitation of the vegetation. Increasing population pressure and the resulting increase in cropped land area make fertility restoration through the traditional long-term fallow system more and more inefficient, and farmers are forced to use degraded lands for agriculture. The. We conducted experiments in Niger to improve the effectiveness of the zai technology, a traditional land rehabilitation technique, by understanding the processes of nutrient release, availability and uptake in the zai system. Specific objectives were to determine 1. effectiveness of the zai planting system with regard to nutrient release and water use; 2. optimum combinations of organic amendment quality and rate; 3. optimum combinations of water catchment area and organic amendments in the zai; 4. on-farm water and nutrient use efficiency under contrasting rainfall/runoff potential conditions; 5. nutrient release from different organic amendments and nutrient uptake by millet. Results indicate that the zai technique is an efficient way to enhance the productivity of pearl millet in the highly degraded soils of the Sahel.

Corresponding Author Information:

Christopher Martius
University of Bonn, Germany
Walter-Flex-Strasse 3
Bonn D-53113
Germany

phone: ++49228731838
fax: ++49228731889
e-mail: c.martius@uni-bonn.de

Presentation Information:

Presentation Date: Wednesday, November 13, 2002
Presentation Time: 9:00-11:00 am
Poster Board Number: 2010

Keywords:
dryland agriculture, organic matter, water harvesting, millet