



Agricultural Journals

Research in

**AGRICULTURAL
ENGINEERING**

home **page** about **us** contact

us

Table of Contents

IN PRESS

RAE 2013

RAE 2012

RAE 2011

RAE 2010

RAE 2009

RAE 2008

RAE 2007

RAE 2006

RAE 2005

RAE 2004

RAE 2003

RAE Home

**Editorial
Board**

For Authors

- **Authors Declaration**
- **Instruction to Authors**
- **Guide for Authors**
- **Copyright Statement**
- **Submission**

For Reviewers

- **Guide for Reviewers**
- **Reviewers Login**

Subscription

Res. Agr. Eng.

Włodarczyk T., Szarlip P., Brzezinska M., Kotowska U.:
Redox potential,

nitrate content and pH in flooded Eutric Cambisol during nitrate reduction

Res. Agr. Eng., 53 (2007): 20-28

Topsoils from 16 arable Cambisols developed from sand, loam and silt were used to study soil ability to nitrate reduction under flooding conditions. The strongest drop of redox potential (Eh) was observed during the first day of soil flooding. Decreasing tendency in pH values was observed of alkaline and neutral soils, and an increase in pH of acid and strongly acid soils, accompanied by a fall in Eh values. Redox potential was negatively correlated with the pH values ($R^2 = 0.3041$; $p < 0.001$). The fall of NO_3^- varied from 20 to 100%

depending on the type of soil and on the time of incubation. With a decrease of nitrate content within the range from 100 to 10 mg NO_3^- -N/kg, the value of redox potential decreased from 250 to 190 mV. The highest reduction of nitrates

coincided with Eh values within a narrow