



*Environmental Science Seminar Series*  
*Presents:*

***Soil Nitrate-Nitrogen Residue:  
An indicator to control nitrate pollution at  
regional scale***



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**Date & Time: Thurs, Jan 16, 5:00 pm**  
**Location: Smittcamp Alumni House**

**(Reception: 5:00 PM – Lecture: 5:15 PM)**

This program is open to all members of the professional, educational, and research communities. It is sponsored by: the Department of Earth and Environmental Sciences, with a grant from the College of Science and Mathematics. For additional information, please contact the Earth & Environmental Sciences Department office at (559) 278-3086 or email [vengieb@csufresno.edu](mailto:vengieb@csufresno.edu).

*Parking restrictions will be relaxed in Lot V (at Shaw and Woodrow Avenues) between 4:30 and 7:00 PM for seminar participants. An online campus parking map is located at: <http://www.csufresno.edu/univrelations/map/Default.html>.*

## ABSTRACT:

The agricultural policy and the economic development after the Second World War resulted in an intensification of cattle farming for dairy products and meat in Western Europe, and in Belgium, in particular. Compounded fodder was partly imported, partly produced locally. Meat was consumed by 50 million people living in Belgium, the Netherlands, northern France and eastern Germany. With good profit, farmers invested heavily and expanded their exploitation. Livestock manure however remained in the country, and was often disposed at ratios of 100 tons/ha/year. Within a period of less than 35 years, the shallow aquifer of Flanders was contaminated with nitrate-nitrogen and phosphorous to the extent that well and surface water could no longer be used.

Under the pressure of European regulations, national governments are required to implement policies and measures that should lead to a reduction of the nitrate-nitrogen concentration in surface and ground water to a level of less than or equal to 11.3 mg N per liter. The question is how to regulate farmers, applying appropriate policies?

This seminar highlights the results of a 2-year research project with a total grant of US\$1.3 million. The project includes tasks: (a) determining the nitrate-nitrogen content norm of the soil profile (0-90 cm) during the period from October 1 to November 15, which would not lead to a further degradation of the shallow groundwater and surface water; and (b) identifying the farming practice in the spring so that the nitrate-nitrogen content norm of the soil profile for the period October 1 - November 15 would not exceeded. If a successful answer could be given to both questions, the nitrate-nitrogen residue in the soil profile can be used as a reliable and relatively easily measure to regulate the fertilizer practice of farmers.