

Groundwater protection, nitrate leaching and farm management



Photographer: Colourbox



Photographer: Claus Haagensen



Summary

In Lower Saxony and Denmark, drinking water comes from ground water. Farm management can, depending on how the drinking water is protected by the soil layers, have a major impact on the quality of the drinking water. In Lower Saxony, the production of biogas based on maize has increased over the last ten years. It has changed the crops from grassland to maize, and increased the use of biogas manure. The consequences of the change in farm management have been an increased nitrate leaching, which can be a threat to the drinking water. The challenge is to find methods to measure the nitrate leaching from the root zone (N-min) and to find methods to utilize and control the amount of organic manure and nitrogen used on the farmland in areas where drinking water need to be protected.

Main Benefits

General aspects

Protection of drinking water is important to secure the public health, but at the same time it is economical important to optimize the agriculture in areas containing drinking water.

- » Secure clean drinking water.
- » Utilize nitrogen to optimize agriculture and reduce leaching.
- » Optimize of the use of pesticides in agriculture.

Economic/job creation

An intelligent approach to protect drinking water:

- » Increasing utilization of nitrogen can minimize the use of industrial produced fertiliser.
- » "Drinking water friendly farming" can secure agricultural production in drinking water areas in the long term

Innovative aspects

- » New methods to predict and control the year to year nitrogen leaching (N-min and other methods).
- » Better utilization of nitrogen can benefit the farmers all over Germany.

Boosters for Implementation

- » Policy framework which will give room and support for local action.
- » Partnership Groups with stakeholders can provide coordination and guidance.
- » Demonstration farms or demonstration on farms with trials that will show how the use of nitrogen and pesticides can be optimized.
- » The availability of payment schemes at a drinking water area level.

Barriers for Implementation in Lower Saxony

- » Farmers' lack of awareness of the consequences of the present farm management on drinking water.
- » Lack of economical motivation for the farmers to change agricultural management.

How to Get Over Barriers

- » Local scale documentation of the consequences of the present farm management.
- » Demonstration farms with trials to show that better utilization of nitrogen and pesticides, not necessarily means less yield and/or less money.
- » Finding financing for drinking water friendly farming.

Policy Recommendations

- » Policy should acknowledge and support 'Farmers as protector of drinking water' more. Besides food production, farmers deliver drinking water friendly agriculture at fair prices to preserve drinking water.
- » Improve and support the development and innovation of methods to measure nitrate leaching from arable land.

More Information

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