



Extract from the report to the
Public Accounts Committee on
the national measures taken to
protect the ground water in Denmark
against pesticides leaching

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I. Introduction and conclusion

1. This report is about the national measures taken to protect the ground water in Denmark against pesticide leaching. Rigsrevisionen initiated the examination in August 2010.
2. The Danish drinking water supply is based on ground water that is passed through a very simple purification process, primarily to filter out naturally occurring substances. There is political consensus that the drinking water supply in Denmark should also in the future be based on largely unfiltered ground water.
3. Using pesticides involves a risk that the pesticides or their degradation products leach into the ground water. The agricultural sector is responsible for the better part of pesticide usage in Denmark, but pesticides are also used in other trades and sectors, like for instance market gardening and fruit farming, the public sector (railroad areas and sports grounds) and in private gardens.
4. In the period under examination, the application of pesticides has increased in spite of the objective of the latest pesticide action plan to reduce usage. To this should be added that according to the annual reports on ground-water monitoring, pesticides are found quite frequently in the ground water and in the waterworks' wells. Most of these pesticides, however, derive from past application of pesticides that are now banned or subject to restrictions.
5. The initiatives to protect the ground water against pesticide pollution include a national as well as a municipal effort. The Ministry of Agriculture, Food and Fisheries (the Ministry of Food) and the Ministry of the Environment are responsible for the national efforts with the latter being responsible for the majority of the initiatives.
6. The objective of the examination is to assess the Ministry of Food's and the Ministry of the Environment's management of the efforts made to protect the ground water against pesticide pollution. The examination answers the following three questions:
 - Have the Ministry of Food and the Ministry of the Environment implemented measures to reduce the usage of pesticides and has the Ministry of the Environment implemented measures to prevent leaching of pesticides into the ground water above the maximum admissible concentration?
 - Has the Ministry of the Environment ensured an adequate quality of the results of the Danish Ground Water Monitoring Programme?
 - Has the Ministry of the Environment ensured an adequate framework of rules for the municipalities' and the waterworks' testing of water wells for concentration of pesticides?

Pesticides are used for weed control and management of fungus and insect attacks on plants. Pesticides are also referred to as plant protection agents.

Degradation products are the substances resulting from the decomposition of pesticides leaching through the soil.

MAIN CONCLUSION

The Danish drinking water supply is unique: it is based on ground water that is passed through a very simple purification process. It is therefore essential to protect the ground water against pesticide leaching.

The protection of the ground water relies on a national as well as a municipal effort. The Ministry of Food and the Ministry of the Environment are responsible for the national effort with the latter being responsible for the majority of the initiatives.

The latest pesticide action plan defines a number of measures to achieve the objective of the plan and reduce usage of pesticides. Rigsrevisionen has established that the Ministry of Food and the Ministry of the Environment have implemented initiatives to reduce the usage of pesticides within the framework of the pesticide plan. Although indications were that the objective set for reducing the usage of pesticides in the agricultural sector would not be attained, the two ministries did not launch any major new initiatives within the plan period.

Rigsrevisionen's examination shows that the Ministry of the Environment's management of the protection of the ground water has been inadequate in significant areas: 1. the pesticide approval scheme, which is a cornerstone in the prevention of pesticide leaching into the ground water above the maximum admissible concentration, is meant to prevent the approval of pesticides with high risk of leaching into the groundwater. 2. the framework of rules providing the basis for the municipalities' and the waterworks' testing of the concentration of pesticides in the drinking water abstracted by the waterworks. The Ministry of the Environment has taken measures to tighten up administration.

The inadequate administration by the Ministry of the Environment has entailed a risk of pesticide leaching into the ground water above the maximum admissible concentration, and has also had the consequence that the waterworks have not tested the water for relevant pesticides. The drinking water may therefore, without the knowledge of the Ministry of the Environment and the municipalities, have contained pesticides. According to the Ministry of the Environment, the concentration of pesticides is, however, not assumed to have represented a health hazard.

Overall, Rigsrevisionen finds the Ministry of the Environment's administration of the protection of ground water unsatisfactory.

The main conclusion is based on the following sub-conclusions:

Have the Ministry of Food and the Ministry of the Environment implemented measures to reduce the usage of pesticides and has the Ministry of the Environment implemented measures to prevent leaching of pesticides into the ground water above the maximum admissible concentration?

The latest pesticide action plan defines a number of measures to achieve the objective of the plan to reduce usage of pesticides. Rigsrevisionen has established that the Ministry of Food and the Ministry of the Environment have implemented initiatives to reduce the usage of pesticides within the framework of the pesticide plan. Although indications were that the objective set for reducing the usage of pesticides in the agricultural sector would not be attained, the two ministries did not launch any major new initiatives within the plan period.

Rigsrevisionen finds that the efforts made by the Ministry of the Environment to prevent pesticide leaching above the maximum admissible concentration have not been satisfactory.

In particular the Ministry of the Environment's administration of the pesticide approval scheme is considered inadequate by Rigsrevisionen. The ministry's pesticide approval scheme is a cornerstone in the prevention of pesticide leaching into the ground water above the maximum admissible concentration. The scheme is meant to prevent approval of pesticides with high risk of leaching into the groundwater. As a consequence of the inadequate administration, pesticides that should have been banned or on the restricted use list were available on the market in the period 2000 to September 2011.

Rigsrevisionen also emphasizes that the Ministry of the Environment has not provided a basis for the identification of particularly pesticide-sensitive areas, which make up a small part of the total area of Denmark. The particularly pesticide-sensitive areas are not protected by the pesticide approval scheme and the pesticide warning system concerning pesticide leaching, and may therefore require special protection. At the same time the Ministry of the Environment has changed its conception of law in respect to the municipalities' access to protect particularly pesticide-sensitive areas: the municipalities are accordingly authorised to issue injunctions against the use of pesticides, and are not required to await instructions from the ministry. However, the ministry failed to inform the municipalities of this change in conception of law. As a result, the administration of the particularly pesticide-sensitive areas may have been inconsistent and the local efforts to protect these areas against pesticide leaching above the maximum admissible concentration may have been impaired.

Overall, the Ministry of the Environment's inadequate implementation of preventive initiatives has entailed a risk of pesticide leaching into the ground water above the maximum admissible concentration.

Has the Ministry of the Environment ensured an adequate quality of the results of the Danish National Groundwater Monitoring Programme?

The Ministry of the Environment's efforts to ensure an adequate quality of the results of the ground water monitoring are being questioned, because a consultancy report demonstrates that sources of error may have contaminated some of the ground water monitoring wells with pesticides.

The Ministry of the Environment is of the opinion that the overall quality of the results of the ground water monitoring is incontestable. The Ministry intends to follow up the consultancy report and examine the wells that may be defective. Rigsrevisionen finds that the ministry should consider the need for further measures when the results of its investigation are available.

The Ministry of the Environment also intends to develop a strategy for the assessment of the quality of the wells and possible subsequent renovation of the wells. Moreover, the ministry intends to collect data on the layout and quality of the individual wells in order to produce an improved complete overview and basis upon which it can be determined whether detections of pesticides are accurate or resulting from sources of error that may have contaminated the water. Rigsrevisionen agrees with the ministry that these measures are necessary.

Has the Ministry of the Environment provided an adequate basis for the municipalities' and the waterworks' testing of water wells for concentration of pesticides?

The Ministry of the Environment has not provided an adequate basis for the municipalities' and the waterworks' testing of water wells for concentration of pesticides. Rigsrevisionen finds this unsatisfactory.

Rigsrevisionen emphasizes in particular the fact that the Ministry of the Environment has not, as required, on an annual basis assessed the need to update the list of pesticides that the waterworks should test for. With the exception of a minor change, the list of pesticides has remained the same in the period 1997 to June 2011, when an updated list was published along with a deadline of 1 January 2012 for compliance with the new list.

Thus the waterworks have been required to test for pesticides that are largely never detected in the ground-water monitoring wells. At the same time, it has not been mandatory for the waterworks to test for pesticides that are detected frequently in the ground-water monitoring well and which the Ministry of the Environment has known to be problematic in respect to ground water leaching.

The Ministry of the Environment's failure to provide an adequate basis for the municipalities' and waterworks' control activities has entailed a risk that the drinking water, without the knowledge of the ministry and the municipalities, may have contained pesticides. According to the Ministry of the Environment, the concentration of pesticides is, however, not assumed to have represented a health hazard.