The objective of the programme is to promote the well-being of Finnish inland waters and the Baltic Sea by producing knowledge and creating solutions to reduce agricultural-based phosphorus and nitrogen loads while taking into account agricultural profitability and biodiversity issues.

MTT

Reducing environmental risks in use of plant protection products in Northern Europe

PesticideLife

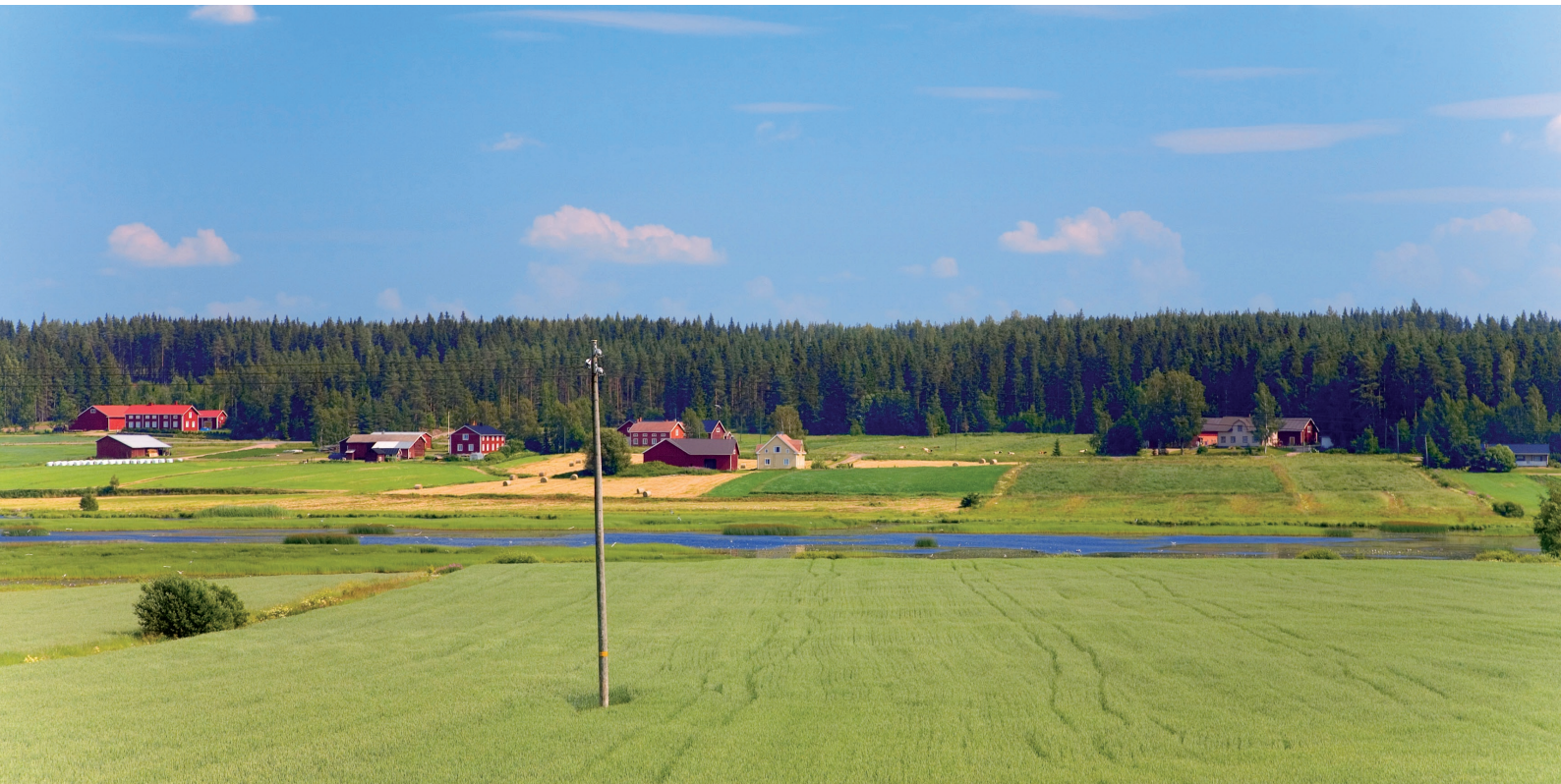
-project 2010–2013

This research specifies actions for a national action plan (NAP*) to support the EU directive on Sustainable Use of Pesticides. This aims to ensure that the national plan is designed to be appropriate for the circumstances of a continuously warming climate and changes in land use and agricultural techniques.

In this context, we specifically concentrate on design and testing of integrated pest management (IPM**) models, including new technologies for field monitoring. Furthermore, we discuss different options for determining ecological risk mitigation of plant protection products as central elements of the NAP. As a demonstrative model crop we focus on cereals. We test three pesticides, an insecticide (alpha-cypermethrin), a fungicide (prothioconazole) and a herbicide (glyphosate). From a regional scale we extrapolate the models to the scale of Nordic-Baltic growing areas.

**NAP: National Action Plan for the Sustainable Use of Pesticides*

***IPM: Integrated Pest Management (IPM) means the careful consideration of all available pest control techniques and subsequent integration of appropriate measures that discourage the development of pest populations and keep pesticides and other interventions to levels that are economically justified and reduce or minimize risks to human health and the environment. Definition by FAO*






Photos: Tero Sivula/Rodeo.fi, Peppi Laine, Heikki Jalli, Erja Huusela-Veistola and Marja Jalli

Decreasing the amount and frequency of pesticide leaching

The aim of the project is to ensure that the amount and frequency of pesticide leaching and runoff into water systems does not increase despite the increased risk due to additional precipitation in winter. By developing and specifying the plant protection methods it is possible to reduce growth in the pesticide load and thus secure the future of domestic cereal cultivation.

Devising a co-operation network on plant protection

Rapid data transmission from decision-makers and from research to practice and vice versa provide for successful cultivation in the face of increasing challenges. The development of a wide and fully functional domestic plant protection network is in everybody's interest. A specific challenge is taken up to stimulate wide involvement of stakeholders in the development process of the upcoming NAP, and to encourage transparency and broad acceptability of the process.

Benefits and weaknesses of IPM methods

IPM methods will be tested and their effects measured in the fields of selected farms in Uusimaa, Häme and Etelä-Pohjanmaa subsidy areas. The aim of the project is to transmit information on practices, catalyse discussion and adopt an attitude favouring IPM-friendly cereal production. With the change in growing conditions and systems, new biological control options may be developed.

Identification of the pests and warning systems

Efficient pest control is based on correct identification of the pests and choosing the most appropriate control method. New pests arrive and old pests can overtake us through rapid adaptation to new circumstances. For example the number of generations in a season can increase. The development of monitoring systems and defining the control thresholds will enhance their management. Warning systems under development will be applied in practice.

The project is coordinated by MTT Agrifood Research Finland, with the contribution of the LIFE financial instrument of the European Community.

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PesticideLife

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