PesticideLife
LIFE+ project

Implementing IPM in Cereal Production in the Northern Zone

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Sweden
PesticideLife project in 2010–2013
1,024 m€, EU LIFE+ funding 50%

Beneficiaries
MTT Agrifood Research Finland
TUKES Finnish Safety and Chemicals Agency
Nylands Svenska Lantbrukssälskap NSL
Advisory Organisation

Stakeholders
Berner Ltd, Raisio Plc, Plant Protection Society (NGO)

Objectives
Develop and implement IPM measures in cereal cultivation, Network, Communicate, LCA and product safety of food
Framework directive 2009/128/EC on sustainable use of pesticides

PesticideLife test farms 3 areas x 3 farms

NAP National Action Plan in 2011

Networking

PesticideLife: Reducing environmental risks in use of PPP in Northern Europe

Reducing environmental and health risks

www.mtt.fi/pesticidelife
IPM – general principles in use from 2014

IPM = Integrated Pest Management (FAO)

- Preventing the development of pest populations
- Integration of all available pest control techniques
- Economically justified
- Reducing risks to human health and environment
PesticideLife - demonstrations in 2010

• Cultivation plans of farmers were carried out
• Observation and follow up of pests by project staff
• Nine farms: **25 cereal demonstration fields in total**
  – 9 spring wheat
  – 8 barley
  – 5 winter wheat
  – 2 oat
  – 1 rye
• Cultivation method mainly ploughing
  – 1 low-till
  – 3 direct-sown
IPM measures in 25 cereal fields

- Monitoring of pests; insects with yellow traps and countings observation of weeds and diseases three times per season

- Chemical control according to threshold values (if existing), only at need

- Using non-sprayed windows

- Follow-up of pest populations and control effectiveness
Conclusions in 2010

- **Risk of SU herbicide resistance is high**
  → 90 % of fields were sprayed with SU herbicides

- **Challenges with data transfer from pest observer to the farmer**
  (from observation to making control decision)
  → Short time span
  → In our case it resulted in 4 non-profitable sprayings against wheat midges
  → Should be done by one person

- Need to develop **threshold values** for plant diseases
  → threshold reached only in 4/14 fungicide applications, however 12/14 were profitable

- **Poor crop rotation**: Same crop as previous summer on 30% of fields
New disease risk forecasting model
Barley net blotch, tan spot, Stagonospora nodorum blotch

Validation in 2010-2011

WebWisu-programme

Cultivation history

Soil cultivation

Variety

Weather data:
Humidity
Precipitation
Temperature

Risk warning:
Moderate
High
Very high

Spore formation

Infection

Observation in the field
From statistics of PPP to regional risks and LCA approach

- Regulation EC no 1185/2009 concerning **statistics on pesticides**
  - Co-operation with Centre of the Ministry of Agriculture and Forestry (Tike)
  - Tike collected data by a trial survey from 1000 farms

- Data is **geographically located** and identified field by field → can be spatially joined with other GIS-based data
  - E.g. crops, watersheds, shelter belts,…
  - Enables regional modelling of use and risks of PPP; need for a risk indicator

- No plans to collect pesticide use data from every single field → needs **extrapolation** (meaning a lot of work)

- Results will help in targeting **pesticide risk reduction actions** in an reasonable way (environmentally)

- Exact PPP use information is needed also in the **Life Cycle Analysis** (LCA) of the cereal chain
Plenty of research and advice needed – resources?

- To develop methods of forecasting and threshold values
- To build and follow-up pesticide resistance strategy in practice
- To develop indicators for sustainable use of PPP
- To establish IPM demonstration farms
- To breed resistant crop varieties (diseases)
- To maintain profitability of plant protection methods

**IN FINLAND** several ongoing IPM projects in 2011
in the area of cereal, vegetable, berry and green house production, and in advice

**Co-operation in the Northern conditions valuable**
Thank You for your attention!

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