How I implement IPM

Details of a holistic IPM strategy with low pesticide input in a European farm

My farm

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PEDO-CLIMATIC CONTEXT

- My farm is based on a heavy clay soil which is typical of this area.
- Typical rainfall for this area is approximately 850mm per annum.

MAIN PESTS

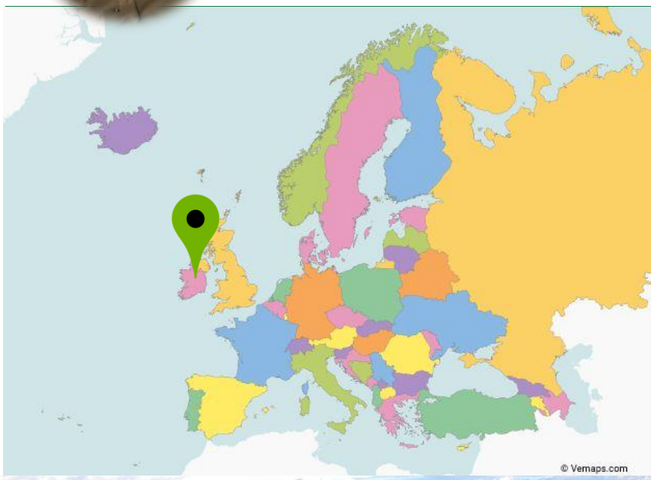
- Fungal diseases such as septoria, rynchosporium, net blotch
- Aphid pests e.g. R Padi, and Mysus persicae which can spread Barley Yellow Dwarf Virus (BYDV)
- Grass weeds, specifically Italian ryegrass, sterile brome although lesser now and wild oats

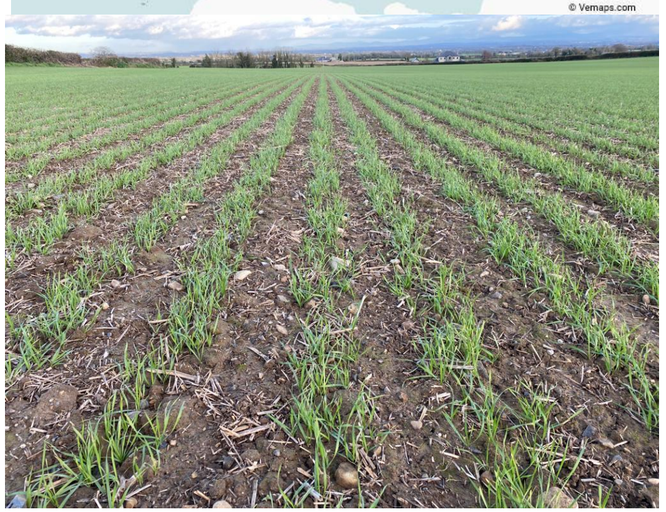
AGRONOMICAL CONTEXT

- Crops grown include winter wheat, winter barley, winter oilseed rape, spring beans and cover crops.
- Crops are established using a Vaderstadt rapid drill with minimum soil disturbance. The cover crops are destroyed with a heavy disc before drilling with beans. No ploughing has been carried out on the farm in a number of years.

SOCIO-ENVIRONMENTAL CONTEXT

- One labour unit with the seasonal help from a neighbour, whose land I also work. Some contracting work





OBJECTIVES AND MOTIVATIONS OF THE FARMER

1. To reduce dependence on pesticides
2. Make the farm more profitable
3. Crop rotation to improve soil structure
4. Pest monitoring to reduce pesticide use

My strategy

Alternative solutions

Agronomical

Genetics

Physical control

N Cover crops for soil structure

Use resistant varieties

N Pest monitoring for BYDV

Crop diversification

N No Continuous wheats

Spring Beans → **Winter Wheat** → **Winter Barley** → **Winter Oilseed Rape** → **Winter Wheat**

Chemicals and biocontrol
Insecticides and other pesticides*

Fungicides*

Herbicides*

*In green = low risk PPPs
* In blue = biocontrol agents

Latest up to date advice followed

Alternative herbicides used for grass weed control

Standard fungicide programmes used

Key measures

- **By taking the approach not to plough the soil it has made me learn more about how to take care of my soils and the impact this has on my crops.**
- **I aim to drill slightly earlier than normal but I realize that this may increase certain risks such as BYDV.**
- **Crop rotation and cover crops play an important role on the farm to improve soil health and to reduce pest issues**

Legend N **New solution** ~~**Solution**~~ **Abandoned solution** **Non systematic solution**

My results

Evolution trend on the farm

Pests control

Very good	Medium	To improve
Insects	Weeds	Diseases

Evolution of use of pesticides

Very good	Medium	To improve
Insecticides Molluscicides	Herbicides	Fungicides

Sustainability indicators

Very good

- ↘↘ Reduction in insecticide use
- ↘↘ Reduction in diesel use
- ↗ Establishment rate
- ↘ Cost of establishment
- = Comparable yields

Medium

- ↘ Reduce nutrient loss
- ↘ Grass weed pressure
- ↗ Carbon sequestration in soil

To improve

- ↗ Use or organic manures

Key conclusions

- Monitoring the crop for pests is important and carrying out in field observations/trials provides important information for crop agronomy during the season.
- Wild oats seem to be less of an issue now than previously, however Italian ryegrass is an issue in certain fields.
- I only used an insecticide on a small area of winter barley in 2022 as part of a trial.
- Biocontrol solutions can be used in combination or alternately with fungicides: sulphur for septoria and plant defence stimulators (laminarin, cos-oga) for barley diseases, etc.

Legend

In green = positive trend
In red = negative trend
In black = comparable

= Comparable

↗ Increase
↘ Decrease

↗↗ Significant increase
↘↘ Significant decrease

Environmental indicators
Social indicators
Economical indicators

Our feedback

"We've got on well with beans and cover crops in the last few years, they are good for sustainability and seem to suit my rotation

Vincent Macken (Ireland)

"IPMWORKS provides an ideal opportunity for farmers to demonstrate and discuss suitable IPM measures for their own individual farms

Shay Phelan, Teagasc (Ireland)

Techniques Employed on the Farm

- Crop establishment techniques
- crop monitoring
- constant knowledge updating
- Rotations
- use of as many IPM techniques as possible all help to reduce the reliance on pesticides.

Opportunities for the Future

- Improved crop breeding to produce more resistant cultivars
- More reliable DSS systems
- Real time monitoring

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