How I implement IPM

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

My farm

Agro PJ I/S
Føllevej 10, 8410 Rønde

PEDO-CLIMATIC CONTEXT

- Agro PJ has all the different soil types, which is present in Denmark. However danish soil is more sandy compared to Europe
- Wet climate.

MAIN PESTS

- Grass weeds – Primarily Italian Ryegrass

AGRONOMICAL CONTEXT

422 ha

Oat: 16%. Winter barley: 9%. Winter wheat: 13%. Winter rapeseed: 12%. Winter triticale: 23%. Spring barley: 6%. Spring barley with underseeded grass: 7%

SOCIO-ENVIRONMENTAL CONTEXT

- Agro PJ is family-run and consists of Peter and Jan

OBJECTIVES AND MOTIVATIONS OF THE FARMER

- The project can contribute good experiences and knowledge sharing among the farmers.
- Identification of new tools and methods to handle the weed Italian Ryegrass.

My strategy

Alternative solutions

The rotation is not a fixed system, but adapts to the context and conditions.

Resistant varieties are chosen. More spring crops to tackle Italian rye grass.

Insect hotels are used to promote beneficial insects.

Hand weeding. However this is only possible in smaller problematic areas.

Spring barley
Winter barley → **Oat** → **Winter wheat** → **Winter rapeseed** → **Winter rye**

Chemicals and biocontrol
Pesticides are only used if no other control tool is available.

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

Key measures

- **Field programs, such as Farmtracking can quantify data on GPS level. We can then refer back to this data to better understand why the problem arised.**
- **Use of decision support systems, which produce a prognosis for when certain problems could arrive in Djursland. E.g. diseases and insects.**

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

My results

Comparison with standards

Pests control

Very good	Medium	To improve
	Italian Ryegrass	

Evolution of use of pesticides

Very good	Medium	To improve
	Herbicides Fungicides, insecticides Seed treatments Biocontrol	

Sustainability indicators

Very good

Irrigation – No irrigations
Complexity of cropping system
↗ Standardized operating expenses
Actual mechanization load

Medium

Dangerous or toxic products to the environment
Dangerous or toxic products to the land
= Overall satisfactions of the farmer/entourage. They are to partners together in the farm
= Workload
= Labour employment
= Distribution of work over the year → adapt till the season
↘ = Real gross product
= Actual mechanization load
= Semi-net margin

To improve

= Sustaniable energy
= Fossil fuel
↘ Chemical fertilizers
↘ Energy costs
Pesticide costs
= Grass-cover/multi-annual crops – sales crop

Key conclusions

- **Agronomical: Focus on the optimal crop rotation to prevent a huge pest problem.**
- **It is now important to implement agronomic solutions that disrupt the ryegrass cycle: rotation with alternating crops from different seasons, false seed-bed and delaying the sowing date, etc.**
- **Economical: Continuously optimizing machinery to fit to the farms needs.**
- **Environmental: Not use more inputs than actual needed, e.g. pesticides and mineral fertilization.**
- **Social issues: working with the surrounding social environment to minimize conflict. Adapt to critique.**

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

> It is important to have other means than just pesticides, because we have seen before what will happen, when only pesticides are relied upon.

Peter & Jan, Agro PJ (Denmark)

IPM has provided alternative tools to conventional pesticides. It just has to be adjusted to the practice of the farm, and the effects have to be seen.

Agro PJ are very keen to try every alternative tool necessary which is affordable compared to pesticides.

> Before it is visible in the field that traditional treatments are not working, alternative sustainable treatments have to be implemented

Mikkel Møller Østerhaab (Denmark)

It is important to maintain the focus on sustainability and get the new methods implemented into daily practice.

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