INTEGRATED PEST MANAGEMENT: *What is IPM and what do the new guidelines cover?*

Integrated Farm Management (IFM) is a whole farm business approach that delivers sustainable farming.'

What does IPM mean?

> ***'Integrated Pest Management' is the careful consideration of all available plant protection methods and subsequent integration of appropriate measures that discourage the development of populations of harmful organisms and keep the use of plant protection products and other forms of intervention to levels that are economically and ecologically justified and reduce or minimise risks to human health and the environment.*** *SUD 2009*

For the last 22 years LEAF has been at the forefront of developing and promoting Integrated Farm Management (IFM) of which IPM measures are an inherent part.

Under the Sustainable Use Directive (SUD) , the UK National Action Plan (NAP) must promote the use of Integrated Pest management amongst professional users.

IPM offers a **toolbox of techniques** that can be tailored to different cropping systems, climatic conditions, pest pressure and availability of solutions. The Sustainable Use Directive definition is flexible enough to allow for situation specific application. By using a combination of techniques to manage a combination of approaches to crop threats, IPM can be seen as a systems based approach where the entire system effect is greater than the sum of individual components. The LEAF Audit provides a useful decision based framework to support farmers in adopting IFM and IPM measures and consider what other options might be available to you.

LEAF is also involved in a project currently underway across Europe called PURE with the aim of creating an IPM toolbox where farmers can pick and choose techniques that work together and will work for them. For further information see: http://www.pure-ipm.eu/.

Under the Sustainable Use Directive there are 8 general principles to IPM. LEAF believes that most, if not all, of these measures will be adopted.

LEAF
LINKING ENVIRONMENT AND FARMING
Integrated Farm Management

1. **Achieving prevention and suppression of harmful organisms**

Prevention of pest outbreaks is a cornerstone of IPM. A well devised crop rotation is a good starting point, together with consideration of: cultivation techniques; use, where appropriate, of resistant/tolerant cultivars and standard/certified seed and planting material; use of balanced fertilisation, liming and irrigation/drainage practices and hygiene measures (e.g. cleansing of machinery).

2. **Monitoring of harmful organisms**

Pests must be monitored by adequate controls and methods, including observations and scientifically-sound warnings and advice from advisors.

3. **Decisions made based on monitoring and thresholds**

Robust, scientifically-sound and scenario relevant threshold values are essential components for decision making.

4. **Non-chemical methods**

Sustainable biological, physical and cultural control methods must be preferred over chemical methods if they provide satisfactory control.

5. **Pesticide Selection**

Pesticides applied are appropriate and as specific to the situation as possible with minimal side effects.

6. **Reduced Use**

The professional user should keep the use of pesticides and other forms of intervention to levels that are necessary.

7. **Anti-resistance strategies**

Where there is a risk of resistance and regular control is required, anti-resistance strategies should be applied.

8. **Evaluation**

Sound analysis of the success of applied plant protection measures should be undertaken continuously. When assessing this it should be recognised that previously, chemical pesticides have been successful at replacing other means of management at low costs. For this reason it is important to develop new symbols of performance to take into account health and environment factors, economics and longer term effects.

What are the benefits of IPM?

IPM can play a significant role in making farming **more environmentally, economically and socially sustainable**. It allows producers to make informed decisions to manage their crops and minimise reliance on pesticides. IPM can help maintain biodiversity, decrease pollution and lower the build-up of pesticide resistance.

The diversity of solutions available in IPM helps ensure the **long-term sustainability** of control measures (Endure, 2013). The continuous use of a single method to control a given pest, be it the most favourable solution initially, can potentially induce pest populations to evolve, adapt and overcome this method, whether chemical or not. Through providing a diversity of techniques the durability of individual components is increased making the whole IPM package more sustainable both environmentally and economically (Birch *et al*., 2011).

In addition to long term sustainability and environmental benefits, long-term economic viability is essential for the success of IPM. A recent global review demonstrated that IPM can reduce pesticide use and increase yields of most major crops studied. In a recent survey of 62 international IPM projects covering 26 countries and 25.5 million ha. of crops including rice, maize, wheat, sorghum, vegetables, potatoes, cotton and legumes, more than 60% of projects resulted in **reduced pesticide use AND increased yields**. On average yields increased by 40% and pesticides were reduced by 60% (Birch *et al.,* 2011).

What are the drawbacks of IPM?

Many of the techniques in the IPM toolbox are straightforward and rely largely on common sense. Indeed techniques such as biological control have been practiced for many centuries, particularly in the glasshouse and fresh produce sector. Some of the biggest barriers are the affordability and access to biological control methods, as well as forecasting and threshold predictive and diagnostic tools.

To gain a full or 'holistic' understanding of the benefits of IPM requires a sound understanding of the interactions between soil, water, air and plants under the unique climatic and cropping conditions on individual farms (Peeters, 2011). This makes the task of developing IPM solutions considerable and is compatible with the findings and experience of LEAF members and those carrying out the LEAF Audit. The diversity of circumstances farmers find themselves in coupled with the complexities of agronomic and ecological processes mean that there is no universal one size fits all IPM solution (Endure, 2013). It is based on tools, which are not within the farmers' control, or availability. As we aim to build more resilient and sustainable approaches to crop health and protection LEAF will be working closely with others to find practical solutions to ensure that we are able to combat pests and diseases alongside producing quality crops. It is critical that IPM strategies are within the context of sustainable production, addressing economic viability, environmental responsibility and social acceptability.

References

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