

PLANT PROTECTION PRODUCTS REGULATION: AGRONOMIC IMPLICATIONS OF PROPOSALS IN THE EU

Executive summary

Member States across Northern Europe grow a similar range of crops and control pests, weeds and diseases with a similar armoury of pesticides (and non pesticidal means). There are regional differences due to differences in climate (e.g. with implications for disease incidence) and different policies (e.g. Denmark have a restricted list of pesticides) but overall, there are no reasons to believe the impact of the proposals will be substantively different to that in the UK.

- A similar range of crops is grown in Northern Europe to the UK, and the range of pests weeds and disease needing to be controlled are broadly similar.
- The range of weeds, pests and diseases that have few or no pesticidal means of control will increase.
- The ability to control the range of challenges posed to different crops will decrease. For some crops in some countries there will be no effective solutions for some pests, weeds and diseases.
- Reliance will be placed on a diminished armoury of crop protection solutions so exacerbating resistance risk and making management strategies ineffective. The risk of serious crop protection failures is increased.
- Flexibility in controlling novel or non indigenous pests and diseases is diminished and plant health strategies are undermined.
- The anticipated loss of triazoles is expected to have broadly similar impact to that in the UK in much of Northern Europe (i.e. northern FR and DE, IR, NL and BE).
- The loss of pendimethalin is expected to be significant across many crops, especially minor crops, in much of northern Europe.

Agriculture in Southern MSs faces different problems, with the warmer conditions leading to a greater requirement for more frequent insecticide intervention. The impact of those proposals resulting in a loss of insecticides would be expected to be more severe in southern MSs, although in protected situations this may drive a move to greater reliance on biological control. The impact of herbicide losses may however be less severe due to different cropping and climatic conditions. Impact of loss of some fungicides, especially those under the commission proposals, are reported to be very severe, with an export of some crop production to outside the EU (Vitacress⁽¹⁾).

This report is indicative of the implications of the proposed Regulation. A definitive assessment would require extensive consideration by agronomists in other member States.

Introduction

An impact assessment of the hazard criteria proposals has been conducted for the UK. No formal agronomic impact assessments have been published by other Member States (MSs). This paper presents an overview of a European Plant Protection Organisation workshop held to consider the impact of the proposals on sustainable crop protection, and then provides some explanation relating to a more general consideration of the anticipated impact in other EU countries, based on an extrapolation of assumptions from UK conditions.

EPPO Workshop

The EPPO Working Party, May 2008, considered that: 'It is very necessary to draw the attention to the need to maintain flexibility in a revised Directive in order to be able to control important pests in a sustainable way, in particular taking into account resistance management. Concern was expressed about the potential impact on sustainable crop production and pest control in amenity land and non-crop situations in future. The need for Integrated Pest Management was emphasized and also the need to have, within such an approach, sufficient effective plant protection products.' Presentations from several countries at this EPPO workshop ⁽³⁾ confirmed serious concerns for certain crops arising from the consequential loss of active substances, as indicated below.

Germany: (Heimbach, JKi) showed the need for a broad range of active substances to manage pest problems, including for resistance management. He highlighted the shortage of effective control options on potatoes and on minor crops. Non-chemical options are often limited on minor crops for economic reasons. The consequences of insufficient control options were illustrated using pollen beetle as an example. In oilseed rape in 2006, 20% yield loss on 200k ha and 80% loss on 30k ha were caused by pyrethroid-resistant pollen beetle. Damage would have been far more serious had methidathion (an organophosphate substance no longer available in the UK) not been available. DE concluded that a range of modes of action are needed for different targets and careful risk-benefit analysis of active substances to be withdrawn was needed. Separately, Dr I Koch stated that economic production of many minor crops, including lettuce, would not be possible with loss of compounds such as mancozeb, pendimethalin and propyzamide.

Denmark: (Kudsk, University of Aarhus). DK has already lost many active substances (40% withdrawn between 1986 and 1997) under the Danish pesticide regime to prohibit actives which are highly toxic, persistent or have leaching potential. This has led to limited control options, especially for minor crops, and effective resistance management is difficult. There are many examples where no or very limited plant protection products are available, and for several crops many growers are struggling to survive. In some cases, certain disease-susceptible cultivars cannot be grown. *Septoria tritici* is the major disease of

wheat in DK and resistance had significantly reduced the performance of strobilurins and reduced efficacy of most triazoles (as in the UK). Triazoles continue to be required for effective disease management. For Integrated Pest Management effective plant protection products are indispensable.

Latvia (Cudere, Plant protection Service). Potato is a very significant crop and a study on the possible availability of active substances has led to a great deal of concern about the impact of the revision and finding sustainable solutions for major pests, weeds and diseases of the crop. The proposals would undermine Fungicide Resistance Action Committee advice which indicates that use of less than 4 modes of action to control pests and diseases is considered extremely risky and unsustainable from an effective pest control and resistance management perspective.

Switzerland, (Cerutti, Federal Dept of Economic Affairs) although not a Member State of the European Union, will be affected and expects difficulties in controlling important pests, due to the small market size of the country. It is anticipated that, because of lack of sufficient active substances, the production of sunflower, sugar beet and berries may become very difficult to sustain in that country. Control of scab and mildew, major diseases of apples, will be particularly difficult. On cereals, around 50% of wheat is produced without fungicides and insecticides, which leads to around 15% yield loss (and with a lower average yield than UK), and on rape, where 25% of the crop is produced without insecticides or fungicides, in some cases 100% losses occur.

Finally, a study prepared by the Resistance Action Committees emphasized the predicted difficulties in managing the risks of resistance of pests and diseases when few active substances will remain. This was illustrated with the expected difficulty in controlling serious pests in important crops like wheat (*Septoria tritici*), grape (*Plasmopara viticola*), potato (potato blight) and olive (olive fly).

General issues relating to impact in other countries

Major arable crops in Northern Europe are relatively common to MSs, and suffer generally from a very similar range of pests, weeds and diseases. This is illustrated by data submitted to PSD where companies are generating common data packages comprising efficacy trials conducted across a number of Northern MSs. These demonstrate the ubiquitous nature of the majority of pests, weeds and diseases across the region. A recent survey on pollen beetle, a pest of oilseed rape, showed that it and many other pests of rape occurred and were similarly controlled in the majority of rape growing MSs. With the exception of some very new active substances, and some old active substances that have been withdrawn in some MSs, the broad armoury of control options was similar across the region. Clearly, severity of attack can vary between countries due to the influence of local, cultural and climatic variation. For example, potato blight is

a disease of greater incidence and severity in wetter conditions, with western UK and Ireland being more severely affected than eastern UK.

Similarly, work in the EU Minor Uses Technical Group shows many of the pests, weeds and disease problems associated with minor crops are common across many countries within Northern Europe. Projects to resolve common gaps in the pesticide armoury by the collective production of data have resulted in authorisations of the same substance in different MSs.

Generally, therefore, crops are impacted by a broadly similar range of pest weeds and diseases, and whilst there is some variation, many of the solutions are common across major countries within Northern Europe.

The impact of loss of a similar range of control options across different MSs would depend on: (i) the intensity of pest, weed and disease problems, (ii) the proportion of those target organisms where control is substantially dependent on active substances affected by the proposals, and (iii) the extent to which productivity is constrained by abiotic stress or sub-optimal inputs - higher yielding crops would be expected to suffer proportionally higher losses for comparable levels of pest, disease and weed incidence, (iv) the availability, effectiveness, and costs of non-chemical control methods

Data from Tallage ⁽²⁾ confirm EU yields (07-08) of wheat across BE, IR, NL, and UK to be above 7 t/ha; from FR, DE, and DK to be between 6 and 7 t/ha; and from all other MSs to be under 5 t/ha. The incidence and severity of the major UK wheat disease controlled by the triazole fungicides, *Septoria tritici*, is likely to be broadly similar across North West Europe, ie northern FR, northern DE, NL, IR and BE (pers com Paveley, ADAS). Thus losses in BE, IR and NL would be expected to be comparable to the UK although the area of wheat grown is small relative to the UK (over 2m ha wheat grown in the UK but 0.5m ha in all of BE, IR and NL). The impact in FR and DE may be marginally less in regions with a more continental climate due to the marginally lower yielding crops and lower *S. tritici* severity. Swiss yields are typically 6t/ha (USDA).

However, some diseases, such as rusts and mildews, may be more significant in other MSs where conditions are warmer than the UK during the growing season. Warmer conditions also impact on many insect pests resulting in shorter generation times and greater requirement for more frequent insecticide intervention. The impact of those proposals resulting in a loss of insecticides would be expected to be more severe in southern MSs. Similarly, Vitacress indicate that very serious production problems on crops such as potatoes and baby leaf salads in some southern MSs would be experienced by the loss of some fungicides (e.g. mancozeb, thiram), and would result in production being moved outside the EU.

From the herbicide perspective, grass and broad leaved weed problems across northern Europe are not dissimilar to the UK. Several MSs identified problems with weeds at the EPPO workshop and the impact of losses, and particularly of pendimethalin, is likely to be significant, especially on minor crops.

Broadly speaking, it is not believed that the impact on major or minor crops from the proposals would be substantively different to the impact in the UK.

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References

(1) Vitacress: [http://www.copa-cogeca.be/img/user/File/work_2008_04_23/PHY\(08\)2713_EN.pdf](http://www.copa-cogeca.be/img/user/File/work_2008_04_23/PHY(08)2713_EN.pdf)

(2) Tallage (agri-market forecasting). Strategie.grains.com

(3) EPPO Workshop, May 2008;
http://archives.eppo.org/MEETINGS/2008_conferences/active_substances.htm