

Wool Pesticide Residues

Pesticide Residue Situation in Europe

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Summary

This paper provides an overview of the comprehensive network of environmental legislation being introduced in the EU. While the Integrated Pollution Prevention and Control (IPPC) Directive is of most immediate concern, it forms only one part of a matrix of legislation that will be applicable through all of the EU. The legislation does not just apply to wool or to textiles, but to all manufacturing, and to all product stages, from raw material to disposal of manufactured product at the end of its life cycle. It reflects a comprehensive 'greening' of Europe, and this is a trend that Australian wool fibre producers cannot afford to ignore.

Keywords

Residues, legislation, Europe

Background

The European Union comprises 15 different countries with different legislative systems and political goals. The attitudes towards the environment differ greatly from country to country, as do attitudes and actual adherence to EU environmental legislation. Pesticides are just one of many environmental concerns in the EU, and textile processing is just one of the industries falling under the EU legislation.

Wool processing in EU is spread throughout the continent but the major centres are Italy, Germany, France and UK. From an Australian wool viewpoint, Italy is the major export market affected.

Germany is at forefront of environmental action, but even there, different States may have differing legislation. Pressures in Italy and France with decentralised governments may also vary substantially from region to region.

Currently the UK represents a 'worst case' situation. The UK wants to demonstrate its "clean" status, and tends to enact all EU environmental law to the letter. It will be the first country to fully implement the Integrated Pollution Prevention & Control (IPPC) Directive, in July 2001.

The regulation of pesticides arising from wool processing is currently mainly confined to water pollution issues.

Main Pieces of Legislation

There are three main pieces of EU-wide water pollution legislation that will affect the wool processing industry due to releases of pesticide from wet processing of raw and scoured wool, however there are several other activities in the EU which will also put increasing pressure on the wool processors to reduce pesticide releases.

The IPPC Directive

This Directive will affect many industry sectors. It includes most large wool processors that discharge effluent such as raw wool scourers, wool dyers and yarn and fabric finishers. The Directive seeks to regulate organochlorine, organophosphate and synthetic pyrethroid discharges, but there are catchall phrases for all other biocides. IPPC will apply on a mill-by-mill basis. It is the obligation of each mill to prove compliance. There are wide-ranging obligations that require public disclosure of all discharges.

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IPPC insists that “Best Available Techniques” (BAT) are used to mitigate discharges. Some companies in some countries can already demonstrate compliance but many cannot. Compliance will almost certainly mean heavy expenditure by raw wool scourers on new effluent treatment equipment. Expenditures in excess of \$1 million will be common for minimum compliance, and costs for more complete treatment systems will be much higher. Compliance will be much slower in those countries with a more pragmatic approach to EU legislation, however IPPC is intended to be fully enforced across the whole of the EU by 2007.

Different countries will interpret IPPC and BAT in different ways but an overall BREF document (Best Practice Reference document) is to be published shortly for the whole EU textile industry.

As a consequence of IPPC, wool textile processors in the EU will want to avoid wool (fibre, tops, yarn, or fabric) with too much pesticide or other environmental contaminants.

The EU has a number of ways of checking compliance with IPPC. Implementation reports will be required from each country in 2003, 2006 and so on. A European Pollution Emission Register will be published every three years covering all IPPC regulated companies for 50 different pollutants. A project to compare how IPPC is being complied with across the EU is already underway.

It is likely that all current EU members will be gradually forced to achieve the same standards as the “best” countries in terms of pollution prevention.

The Water Framework Directive.

This is a wide ranging piece of legislation designed to improve all EU river systems by 2015. After long delays this directive is now moving ahead rapidly. The official text was published earlier this year. The force of this directive has been considerably diluted although it will eventually effect all wool textile processors that discharge effluent.

The priority water pollutants for regulation include: chlorfenvinphos, chlorpyriphos, cadmium, endosulphan, HCB, HCH, mercury, nonylphenols, and PCP - all may be found in wool textile effluents, although the impact on current Australian practices should be low.

“Limit values” will be placed on point source emissions to environmental waters. In some cases the limit values will be placed on individual mills. Where limits are placed on sewage treatment works, they will impose limits on mills via their trade waste acceptance criteria.

Environmental Quality Standards will be used to address cumulative emissions (river concentrations). Based on the current UK system, these are draconian.

Environmental Liability

A draft Directive on Environmental Liability will be issued in June 2001 and this will lead to full Directive later in 2001. The Directive will ensure the “polluter pays” principle and guarantees consistent enforcement of basic rules across the EU membership. Some member states are forcing the European Commission to increase the severity of the legislation.

Environmental liability will be incurred through loss of biodiversity at any site caused by any activity.

Industry sectors may be forced to set up funds to cover costs of liability of companies no longer in business. The Directive will not be retroactive but could enforce regulations for industry segments that are not caught under IPPC. Compliance with permit conditions may not necessarily prove an adequate defence.

Most wool processing plants in the EU have a history of pollution and most continue to have an impact on the environment. Liability will be most likely to occur when processors close down, or move to new premises, or it may occur as a result of disclosures for IPPC legislation.

The extent of liability will vary from country to country within the EU.

Other EU Environmental Activities.

Pesticide Assessment

A process of Pesticide Assessment is being developed in the EU. This will comprise “approved” and “banned” chemical lists. Lindane and permethrin have recently been recently banned in the EU as agricultural pesticides, however both chemicals can still be used for non-agricultural purposes. Pesticides for animal treatment will be considered later this year/next year.

From July 2003 only chemicals on the “approved” list will be legal for agricultural/animal use in EU.

A European Chemicals Agency is mooted which will focus on chemicals with health and pollution potential. There will be attention on “new” chemicals entering the EU as products or in raw materials (i.e. new pesticides in raw wool).

Integrated Product Policy

There is an EU Green Paper on reduction of environmental impact of products. It is driven by the EU’s desire to encourage “green” products. The policy could affect all stages of wool carpet and apparel manufacture in EU and the raw materials including wool itself. The draft paper will be formally adopted within months. The current EC presidency is keen to see this moving forward.

The policy will introduce:

- low impact manufacturing;
- dissemination of environmental information along product chain;
- increase scope for national and EU eco-labels;
- low tax rates on low impact products; and,
- it makes the producer responsible for the product at the end of its life.

Endocrine Disrupters

Chemicals that are suspected of causing fertility problems in the environment are being placed on a new “disrupter” list. Some organochlorine and organophosphate sheep dip pesticides are suspect chemicals. The publication of the list has major industrial opposition in EU but “progress” is still being made on it.

OSPAR and Greenpeace

The OSPAR Convention wants 27 hazardous substances to be banned from North Sea by 2020.

The pressure group Greenpeace has accelerated OSPAR policy by challenging textile industry directly on releases of flame retardants and use of nonylphenol and alkylphenol ethoxylate surfactants in printing dyes. Retailers have also been targeted and many in UK have begun to ban these chemicals from their products.

Greenpeace and other pressure groups have a high profile in Northern Europe. They are almost certain to try the same tactics with pesticides in textiles.

Direct Toxicity Assessment (DTA)

DTA monitors and controls effluent discharge on basis of effluent toxicity rather than content of known pollutants. It is commonly used in USA, however large scale trials on DTA have been carried out in the UK on one river with big wool textile input. DTA is a very expensive way of monitoring effluent but the Water Framework Directive opens the door to this type of regulation across all EU countries. Companies caught under the IPPC directive with releases to surface water would be the first to be affected.

Pesticides in Wool and Effluent

The UK is probably the “worst case scenario” for EU. In the UK, the draft Environmental Quality Standard (EQS) for total organophosphates has been confirmed at 30ng/L. From an Australian

perspective, this applied to diazinon as the main organophosphate used, but in the UK, use of propetamphos is significant. The draft EQS of 0.1 ng/L has been confirmed for cypermethrin.

As the UK EQS concentrations have been established by a relatively accessible risk assessment process, it is likely that they will also be adopted by many other EU countries.

To achieve effluent limits for organophosphates, a reduction in pesticide discharges of 80% will be required. To achieve effluent limits for cypermethrin, a 99.8% reduction will be required.

Raw wool from most European sources contains too much organophosphate pesticide, and raw wool from most sources world-wide contains too much cypermethrin. Raw wool scourers and many wool dyers will need to install a significant degree of secondary effluent treatment.

The UK will be the first country to implement and enforce IPPC. It is likely that for organophosphates, and particularly cypermethrin, the residue on wool after proper treatment of the sheep and normal shearing is too large for the limits now being imposed in UK. For the UK, the only solution is to install effluent treatment at mills, however reductions in the fleece would greatly ease the problem.

There is increasing pressure being brought to bear on the insect growth regulators (IGRs) in the UK. It is inevitable that they will be targeted by the EU. The EQS concentrations could be as low as the organophosphates or even the synthetic pyrethroids. Woolgrowers should carefully consider their current practice of substituting organophosphates and synthetic pyrethroids with IGRs.

Exporters of raw wool, scoured wool and wool products to EU should be aware that EU purchasers will increasingly choose to buy low pesticide material.

Australian Wool in Europe

Australian wool is recognised as being low in pesticide content.

The actions of Australian woolgrowers in reducing pesticide levels in wool are appreciated by European manufacturers.

Any wool that has low pesticide content is increasingly likely to be chosen in preference to other wool - Australia has a head start in this respect.