

## **Ecolabels –An opportunity to identify low residue wools in the marketplace.**

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### **Summary**

*Ecolabels are widely recognised in Europe and they can be used to enhance the clean green image of Australian wool. One of the ecolabels, the EC Eco-label for Textiles, requires the use of low residue wool that must be processed using good environmental practices. The requirements are strict but readily achievable. It will provide a mechanism for recognition of low residue Australia wools in the market place.*

*There are potentially so many different ecolabels that consumers have difficulty understanding what they each represent. It is important that the mainstream labels attain sufficient market share to be recognised by consumers. The EC Eco-label is applicable to a wide range of products from computers to varnishes to paper products. Its symbol will therefore be widely recognised in all EU countries and on a range of product types.*

*The EC Eco-label for Textiles examines the overall environmental impact of producing a garment. It sets pesticide residue limits for raw wool of 0.5 mg/kg organochlorines, 2 mg/kg organophosphates and 3 mg/kg synthetic pyrethroids, however there are special provisions where wool growing groups with QA systems may be able to make declarations that they have not used specific chemical on their animals or land.*

*There is equal emphasis on certifying a clean production pipeline. There are limits on effluent discharges from scouring, shrinkproofing and dyeing. All processing agents (detergents, lubricants and sizes) must be biodegradable. Tests are also required to ensure that the garments are washable and colourfast, so that the final product will be durable.*

*A supply chain approach from farm to market is needed. CSIRO Textile and Fibre Technology is upgrading its small scale processing facilities and is compiling a list of Australian processors who can meet the requirements of the EC Eco-label for Textiles to ensure that as much processing as possible is conducted on-shore.*

### **Keywords**

Ecolabel, low residue wool, market, Europe

### **Introduction**

There is a fundamental shift to 'green' purchasing in the major European countries. Surveys consistently show that mainstream consumers now make purchasing decisions based on ecological concerns. 'Green' is no longer restricted to the fringes of society.

Ecolabels are a major mechanism where consumers can recognise and purchase environmentally superior articles. Indeed the literature supporting the EC Eco-label asks consumers to question 'Why does this product not have an ecolabel?'

Australia has little experience with ecolabels, however they can be used to enhance the clean green image of Australian wool. One of the ecolabels, the EC Eco-label for Textiles will be promoted through Europe this year. It requires the use of low residue wool that must be processed using good environmental practices. The requirements for growers and processors are strict but readily achievable.

It is important to strike a balance with ecolabel requirements, to set standards that encourage the top wool producers and processors to meet the targets, and yet still allow a good flow of products to the marketplace so that specific ecolabels attain sufficient market share to be recognised by consumers.

Some ecolabels set standards that are so high that few natural fibres can ever pass the requirements. Some are privately owned, some have national backing, while some are recognised only in a few countries.

There are potentially so many different ecolabels that consumers have difficulty understanding what they each represent.

It is important to note that the European Eco-label for Textiles does not just apply to natural fibres. The synthetic fibres also have an opportunity to make ecological claims and it is important that natural fibre products continue to build on the perception that they are environmentally superior.

## **Discussion**

Broadly speaking, there are two different types of ecolabels. One type, the so-called 'human ecology' labels, seek to assure consumers that the final garments are free of harmful toxic materials. The emphasis is placed on chemical analysis of the final garments for a wide range of metals, pesticides, processing agents, and dyestuffs. At this stage, these labels are not well suited for the needs of Australian wool, as most of the pesticides listed are organochlorines that have never been used on sheep, and the one or two that were used were removed from the Australian wool clip in the late 1980s.

The second type of ecolabel takes a much broader view, and examines the overall environmental impact of producing and using a garment, and may even consider the ease of cleaning, ultimate disposal and recyclability of a textile product. This is the lifecycle analysis (LCA) or 'cradle to grave' approach. These ecolabels place greater emphasis on clean production of textile goods, and recognise that the greatest environmental impacts in producing a garment may be in scouring, dyeing, and finishing of the goods. The EC Ecolabelling Scheme is based on LCA.

In Australia, the energy 'star' system for rating energy usage of whitegoods is actually an ecolabel of this second type, as the greatest overall environmental impact of operating a refrigerator or an airconditioner is the energy used in its lifetime of operation. The energy to manufacture the item is insignificant in comparison, and the most ecologically efficient unit will be the one that uses energy most effectively throughout its life. There is an overall environmental benefit to spend more energy and resources to manufacture a more sophisticated, energy saving unit in the first place.

There are strong connections between environmental labelling, lifecycle analysis, sustainability and trade. All are linked through the developing ISO 14000 series of standards. Sustainability is expected to become an important requirement in international trade negotiations.

### ***Requirements of the European Eco-label***

The EC Eco-label requirements for textiles were released in February 1999. Since that time, the overall requirements for the EC Eco-label have been relaxed to allow easier access for products originating from outside the EU. The requirements are due for revision in 2002.

The requirements for textiles relate to all fibre types and their processing, so that oils, lubricants and sizes must be biodegradable, and certain additives, dyes, detergent types, formaldehyde and halogenated carriers cannot be used. There are some limits imposed on discharges from certain processes. The main thrust of this label is on clean processing, as this is where the main environmental impact is expected.

### ***Raw fibre requirements***

There are some specific requirements for specific fibres. The pesticide limits for greasy wool are:

- Total organochlorines below 0.5 mg/kg.
- Total organophosphates below 2 mg/kg.
- Total synthetic pyrethroids below 3 mg/kg.

There are alternative means of declaring residue status available to members of quality growing groups who have control and knowledge of pesticides applied to their sheep and to their land. There are special procedures for these groups where a blanket declaration of residue status may be made.

The pesticides that must be certified as absent on wool include several that are not registered for use on sheep in Australia. CSIRO is including them in its low-cost residue test so that the standard analysis can be accepted for European Eco-label requirements.

It is encouraging that the European Eco-label recognises that ectoparasiticides need to be used on sheep to grow high quality wool, and that low pesticide wools produced by current best practice (and shown to be free of any possible human health concerns) can be specified, rather than 'zero' residue wools that can never be produced.

### ***Processing requirements***

The environmental processing targets set by the European Eco-label are designed to be attainable by the top 30% of processors. The aim is not to enforce 'environmental best practice', but rather to encourage participation in the scheme, and to invite the poorer performers to improve their environmental performance.

Most of the processing requirements can be made by declaration, supported by certification from manufacturers of the processing agents, but there is still some testing required, such as for pentachlorophenol which may be inadvertently included in some agents. The focus is on keeping potentially toxic agents such as heavy metals and carcinogenic dyestuffs out of the processing chain at their point of application.

In keeping with the life cycle concept, manufactured goods must be 'fit for use', and there are requirements on dimensional stability, colourfastness to washing, perspiration, and light. This is important in two ways: (1) to guarantee to consumers that the product will perform and not shrink or fade, and (2) to reduce the overall environmental impact caused by manufacturing a replacement garment.

The EC Eco-label for Textiles does not impose limits on energy and water use at this stage, however 'the applicant is requested, on a voluntary basis, to provide detailed information on water and energy use for the manufacturing sites involved in spinning, knitting, weaving and wet-processing.'

### ***Other ecolabels***

The other class of ecolabels is the 'human ecology' type, designed to show that the final garment is 'free' of harmful agents. Unfortunately the 'limits' set in some of the human ecology labels are usually arbitrary and not based on rational risk assessments, either to humans or the environment. There are questions being raised as to the future of some of these schemes as they need to attract a sufficient customer base to gain recognition. There may be significant costs associated with performing the analysis on each product in a product range at frequent intervals.

One of the major labels is the privately owned Oekotex Standard 100 which sets different limits of extractable materials for different product types, from baby wear to skin contact garments to outerwear and decoration material. For baby wear, there are limits on 9 extractable heavy metals, chlorinated phenols, six plasticisers, certain dye types, halogenated carriers, biocidal finishes, fire retardants, volatile organics (8 chemicals), as well as colour fastness and odours. Pesticides (17 organochlorines, as well as 2,4,5-T, 2,4-D, carbaryl, toxaphene and trifluralin) must total less than 0.5 mg/kg. Only licensed laboratories are able to issue the label.

The analysis is conducted on the finished garment after the wool is scoured and then dyed. Residual pesticides on wool goods originating in Australia should not be an issue, as none of the listed pesticides are used on sheep in Australia, and because scouring and dyeing remove most residues that were on the raw wool anyway.

There are several other labels that set different concentrations for different toxicants. One has set limits so tight that natural fibres can never meet their requirements, even if analytical techniques were available to measure contaminants at the concentrations specified.

The boundaries between the ecolabel types are blurring as some of the human ecology ecolabels seek to broaden their analytical base and to certify the absence of toxic agents by auditing of the production process, in a similar way to the EC Eco-label.

### ***Supply chain approach***

Because processing of a wool product from scouring through to final garment may take place in many different countries, a supply chain approach to provide a specific product range is needed. CSIRO Textile and Fibre Technology is compiling a list of Australian processors who can meet the requirements of the EC Eco-label for Textiles to ensure that as much processing as possible is conducted on-shore. At present CSIRO is upgrading its small scale scouring and processing line to EC Eco-label standards, and there are three full scale wool scours which potentially can comply.

### ***Recognition in the market place***

The EC Eco-label is applicable to a wide range of products from paints and varnishes to paper products. The EC Eco-label for Textiles is part of that same scheme and shares the common EC Eco-label symbol. This logo will therefore be widely recognised in all EU countries and on a range of product types.

Australia can easily supply large quantities of raw wool to meet the requirements of the EC Eco-label for Textiles. When a processing supply chain is established, the EC Eco-label for Textiles will allow improved recognition of low residue Australia wools in the market place.

## **Conclusion**

Wool is a natural, renewable, low-energy use fibre and it has the potential to benefit from the proliferation of ecolabels. It is important to participate in the ecolabel process to ensure that wool retains its image of being an environmentally sustainable fibre, and to show that low residue wools produced by current best practice can be processed into environmentally superior products. Suitable low residue wool is readily available in Australia, and after the wool is scoured and dyed, final residues on manufactured goods will be well below those that would lead to any human ecological concerns.

The EC Eco-label for Textiles seems to be a realistic compromise that begins to impose good environmental practices on producers and processors of the fibre, and at least starts to deal with the modern pesticides that are used on sheep. It also has the potential to be recognised widely across Europe, and therefore can be used as a mechanism to identify wool goods produced by best practice growers and processed using good environmental practices.