

SCOURING AND TOPMAKING

GREASY WOOL AND OTHER KERATIN FIBRES (INCLUDING WOOL FROM SHEEP, CAMEL, ALPACA, GOAT)

3.5.1 Current criterion

The current criterion is divided into four parts, three of which concern the use of pesticides, while the last concerns emissions from the scouring process:

- a) The sum total content of the following substances shall not exceed 0.5ppm:
-hexachlorocyclohexane, α -hexachlorocyclohexane, lindane (-hexachlorocyclohexane), β -hexachlorocyclohexane, aldrin, dieldrin, endrin, p,p'-DDT, p,p'-DDD.
- b) The sum total content of the following substances shall not exceed 2 ppm:
propetamphos, diazinon, dichlofenthion, fenclorphos, chlorfenvinphos
- c) The sum total content of the following substances shall not exceed 3 ppm: cyhalothrin, cypermethrin, deltamethrin, fenvalerate.

These requirements (as detailed in a), b) and c) and taken separately) do not apply if documentary evidence can be presented that establishes the identity of the farmers producing at least 75% of the wool or keratin fibers in question, together with a declaration from these farmers that the substances listed above have not been applied to the fields or animals concerned.

Test method for a), b) and c): Serial non-polar/polar solvent extraction, clean up with gel permeation chromatography and determination with capillary gas-liquid chromatography with electron capture detection. Test report required on application.

- d) For scouring effluent discharged to sewer, the COD discharged to sewer shall not exceed 60 g/kg greasy wool, and the effluent shall be treated off-site so as to achieve at least a further 75 % reduction of COD content.

For scouring effluent treated on site and discharged to surface waters, the COD discharged to surface waters shall not exceed 5 g COD/kg greasy wool. The pH of the effluent discharged to surface waters shall be between 6 and 9 (unless the pH of the receiving waters is outside this range), and the temperature shall be below 40°C (unless the temperature of the receiving water is above this value).

Test method for d): ISO 6060. Test report and appropriate data required on application."

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3.5.2 Changes to the criterion

3.5.2.1 Criterion 5a-c regarding pesticides

Different substances are used in sheep farming to protect sheep from ectoparasites such as lice, mites, blowfly, etc. that in the worst case can kill sheep in a matter of days. The substances used as veterinary medicines to protect sheep are a group of pesticides called ectoparasiticides. These pesticides may be organophosphates, synthetic pyrethroids or insect growth regulators.

Also organochlorines have previously been used but all major grower countries have banned the use of organochlorine pesticides for sheep treatment today. However, there is evidence that wool from some former Soviet Union States, the Middle East and South America contains organochlorine pesticides, in particular lindane, at detectable concentrations.

According to the Australian Textile Institute CSIRO (CSIRO, 2001) the synthetic pyrethroids also show high aquatic toxicity. In general the toxicity of the pyrethroids is considered as more severe than the aquatic toxicity of organophosphates. For instance the Environmental Quality Standard set by UK is for diazinon (OP) 30 ng/l of scouring effluent and for cypermethrin (SP) as low as 0.1 ng/l showing that cypermethrin is assessed to be more toxic than diazinon (International Wool Textile Organization, IWTO, 2000).

For the insect growth regulators a distinction should be made between the hydrophilic compounds cyromazine and dicyclanil and the more hydrophobic compounds like diflubenzuron and triflumuron. The first mentioned is considered as benign according to a risk assessment conducted by CSIRO. On the other hand the toxicity of diflubenzuron and triflumuron is considered to have an aquatic toxicity similar to that of the organophosphates.

Test method

According to CSIRO the test method for testing the pesticides listed in the current criterion may give reliable results under suitable conditions, but does not include a requirement on satisfactory participation in interlaboratory comparisons. Instead an IWTO draft test method could be recommended (Draft Test Method 59). The test method has two main principles, i.e. that laboratories maintain adequate performance in an IWTO-approved interlaboratory testing program, and that laboratories are accredited to ISO Standard 17025 for the analysis. The two principles are linked in practice, because the ISO 17025 accreditation is very difficult without the independent interlaboratory validation. The Draft Test Method IWTO 59 includes the following pesticides, some of which are not included in the eco-label criterion:

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Table 5. Substances included in the IWTO 59 Draft Test Method. Substances with a “#” are specifically mentioned in the method. Substance group Substance Limits of reporting (mg/kg)

<p>Organophosphates Propethamphos n.d. (< 0.1) # Diazinon n.d. (< 0.1) # Dichlorfenthion n.d. (< 0.1) Chlorfenvinphos n.d. (< 0.1) # Chlorpyriphos n.d. (< 0.1) # Coumaphos n.d. (< 0.1) # Fenclorphos n.d. (< 0.1)</p> <p>Synthetic pyrethroids Cypermethrin n.d. (< 0.1) # Cyhalothrin n.d. (< 0.1) # Deltamethrin n.d. (< 0.1) #</p>	<p>Fenvalerate n.d. (< 0.1) Insect Growth Regulators Diflubenzuron n.d. (< 1) # Triflumuron n.d. (< 1) # Cyromazine n.d. (< 1) # Dicyclanil n.d. (< 1) # Organochlorine Aldrin n.d. (< 0.1) # alpha-BHC n.d. (< 0.05) # beta-BHC n.d. (< 0.05) # delta-BHC n.d. (< 0.05) # gamma-BHC (lindane) n.d. (< 0.05) # DDD n.d. (< 0.05) #</p>	<p>DDE n.d. (< 0.05) # DDT n.d. (< 0.05) # Dieldrin n.d. (< 0.05) # alpha-endosulphan n.d. (< 0.05)</p> <p>Substance group Substance Limits of reporting (mg/kg) beta-endosulphan n.d. (< 0.05) Endosulphan sulphate n.d. (< 0.05) Endrin n.d. (< 0.05) Heptachlor n.d. (< 0.05) HCB n.d. (< 0.1) #</p>
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No actual analytical procedure is specified and this allows application of state of the art and lowest cost methods. According to CSIRO, a specified method (such as the previous GPC/ecd recommendation) tends to lock older and less adequate technologies into place.

Proposal for a new criterion

The list of substances for which test has to be carried out is proposed to be a total sum list of ectoparasiticides found according to the IPPC note or covered by the current eco-labeling criteria. This will include insect growth regulators, which have a high aquatic toxicity. As an exception the insect growth regulators cyromazine and dicyclanil will not be included as these have shown to be benign according to CSIRO's risk assessment, based on the Australian NRA discussion document (NRA, 1998).

The new criterion 5 a-d is proposed as follows:

(a) The sum total content of the following substances shall not exceed 0.5 ppm: ã - Hexachlorocyclohexane (lindane), á -hexachlorocyclohexane, â - hexachlorocyclohexane, ä -hexachlorocyclohexane, aldrin, dieldrin, endrin, p,p'-DDT,p,p'-DDD.

(b) The sum total content of the following substances shall not exceed 2 ppm: diazinon, propetamphos, chlorfenvinphos, dichlorfenthion, chlorpyriphos, fenclorphos.

(c) The sum total content of the following substances shall not exceed 0.5 ppm: cypermethrin, deltamethrin, fenvalerate, cyhalothrin, flumethrin.

(d) The sum total content of the following substances shall not exceed 2 ppm: diflubenzuron, triflumuron.

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These requirements (as detailed in (a), (b), (c) and (d) and taken separately) do not apply if documentary evidence can be presented that establishes the identity of the farmers producing at least 75% of the wool or keratin fibers in question, together with a declaration from these farmers that the substances listed above have not been applied to the fields or animals concerned.

Assessment and verification for (a), (b), (c) and (d): The applicant shall either provide the documentation indicated above or provide a test report, using the following test method: IWTO Draft

Test Method 59.

3.5.2.2 Criterion 5 d (now 5e) wastewater

In the ahWG the issue has been raised if the value for COD discharge from wool scouring mills with discharge to external effluent treatment plant could be lowered. The criterion for discharge of COD in the scouring effluent is in the current criteria document divided in two parts, one for discharge to sewer and one for discharge to surface water. The level for discharge of COD is 60 g/kg greasy wool to sewer and 5 g/kg greasy wool to surface water, respectively. A further demand on indirect discharge is an additional 75% reduction in the sewer.

“For scouring effluent discharged to sewer, the COD discharged to sewer shall not exceed 60 g/kg greasy wool, and the effluent shall be treated off-site so as to achieve at least a further 75% reduction of COD content, expressed as an annual average.

For scouring effluent treated on site and discharged to surface waters, the COD discharged to surface waters shall not exceed 5 g/kg greasy wool. The pH of the effluent discharged to surface waters shall be between 6 and 9 (unless the pH of the receiving waters is outside this range), and the temperature shall be below 40°C (unless the temperature of the receiving water is above this value).

Assessment and verification: The applicant shall provide relevant data and test report, using the following test method: ISO 6060.”