

FEDERATION OF AUSTRALIAN WOOL ORGANISATIONS

AUSTRALIAN NATIONAL COMMITTEE OF IWTO

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TO: All Members

FROM: Peter Morgan

Update of Progress in Dark & Medullated Fibre Risk Project December 2003

The project has now finalised, with the final report to be sent to AWI today. In addition the following summary was circulated to grower associations (State and National (including AWGA), Australian and WA Stud Merino Breeders Associations, Departments of Agriculture, ACWE Members, AWPC Members, PTWMA Members, NCWSBA Members, the Inland Wool Brokers Association, ASWGA and Ausfine Wool Company.

In Dubrovnik, Croatia in December 2003, the International Wool Textile Organisation (IWTO) approved a recommendation from the Federation of Australian Wool Organisations (FAWO) that a Dark and/or Medullated Fibre Risk (DMFR) scheme for Australian Merino wool be recognised in its Core Test Regulations from 1 July 2004. This allows inclusion of the Risk Level on AWTA Ltd Core Test Certificates. AWEX has been approached to facilitate inclusion in sale catalogues.

IWTO recognition opens the door for the DMFR scheme to be introduced for use by Australian Merino woolgrowers in July 2004. The scheme will provide:

- Merinos woolgrowers with the opportunity to declare their wool of low risk of contamination by dark and or medullated fibres, and
- Buyers with tools to control/manage the risk of unwanted delivery of dark and/or medullated fibres.

It is anticipated that the DMFR scheme will be useful in countering alarm about the degree to which the Australian Merino clip is contaminated, thereby protecting its high standing.

Background

Over the past two decades, non-specialist woolgrowers have introduced to Australia meat breeds often called exotics¹, which are used for the live sheep trade. These breeds are crossed with Merinos to increase the numbers of exotics as well as to produce prime lamb.

Dark fibre contamination (dark fibres in white/pastel fabrics) of the Australian Merino clip is usually associated with urine-stained and isolated pigmented fibres in the fleece. Recently, contamination has arisen from the transfer of dark and/or medullated fibres from exotic breeds to Merinos. Exotic breeds shed pigmented and medullated fibres and their transfer is primarily a result of this. Fibre transfer may occur during mating, and later when the Merino ewes rear an exotic cross lamb. Claims for compensation based on medullated fibre contamination of fabric (white fibres in dark fabric), have resulted in industry concern that the reputation of the Australian Merino clip may be adversely affected by pigmented and medullated fibres originating from exotic sheep.

A project, initiated by the Federation of Australian Wool Organisations (FAWO) and funded by Australian Wool Innovation Ltd. (AWI), developed a scheme to identify the potential risk of these fibres being present in Merino wool. The scheme involves voluntary declaration by the vendor (Merino woolgrower), made at the time of shearing, of the information required to determine the DMFR for each line of wool.

¹ Exotic refers to sheep breeds that shed pigmented and/or medullated fibres and are allocated an AWEX Breed Risk Rating of 5. In the 2004 AWEX Code of Practice, these breeds are Awassi, Damara, Dorper and Karakul.

A Working Group comprising John Gubbins (Wool Producers), Michael Jackson (AWTA Ltd), Jonathan Lillie (PTWMA), John O'Connor (NCWSBA), Peter Morgan (FAWO), Lindsay Spencer (AWEX) and George Waldthausen (AWI) was formed to oversee the project. Dr Kerry Hansford, formerly of CSIRO and Australian Wool Handlers, was appointed as Project Leader.

Factors determining the Dark and Medullated Fibre Risk

Research conducted by CSIRO in the 1980s/90s into urine-stain and isolated pigmented fibre contamination of Merino wool led to the prediction of the “risk” of dark fibre contamination. Called the CSIRO Dark Fibre Risk scheme, it calculated the “risk” that a particular sale lot would meet the requirements of the white/pastel trade. Although not commercially implemented, its principles were incorporated into wool quality schemes such as Clipcare and DalCare.

The new DMFR scheme is based on CSIRO’s Dark Fibre Risk Scheme; however, it was expanded to include information on the contamination risk related to contact between Merinos and exotics.

Voluntary Vendor (Woolgrower) Declaration for Dark and/or Medullated Fibre Risk

The voluntary vendor declaration, made at the time of shearing, collects information for the determination of the DMFR on the Classer’s Specification form (see Figure 1) or a separate Woolgrower declaration form. This information includes:

- Wool type (Fleece, Pieces, Lambs, Bellies, Locks, Crutchings, Stain etc.),
- Y, P or S AWEX ID qualifiers for pigmented, medullated or stained fibres,
- Whether the sheep have been in contact with exotic breeds²,
- Age of the sheep,
- Sex of the sheep, and
- Whether the sheep have been crutched, and if so, was 3 months before shearing.

Figure 1 Standard Classer’s Specification

The form is divided into several key sections:

- SHEARING DETAILS:** Includes checkboxes for 'Is the shearing complete?', 'Wool Pack Type' (New/Used), and 'Date shearing completed'.
- OFFERING INSTRUCTIONS:** Includes checkboxes for 'Offer Wool in 1st available sale', 'or test and hold for offering instruction', and 'or part offer clip as lines complete'.
- CLIP TYPE:** Includes checkboxes for 'MERINO', 'CROSSBRED', and 'CROSSBRED'.
- OFFICE USE:** A large table with columns for 'No. of Bales', 'L/S', 'Description', and 'Individual bale numbers' (1-12). It also includes columns for 'DMFR (Y/P/S)', 'Mots No.', and 'Classers Comments'.
- Woolgrower Declaration (highlighted in red):** A section at the bottom containing a table for recording 'Dark and Medullated Fibre' and 'Crossbred' status for each bale. It includes fields for 'No. of Bales', 'L/S', 'Description', 'Age (years)', 'Sex', 'Contact with exotic breeds', and 'Crutched (Y/N)'. It also includes a signature line for the 'Woolgrower/Manager Signature'.

² Contact is defined as Merinos mated to, run in the same paddock as, or reared exotic lambs/sheep or their crosses.

The DMFR Scheme

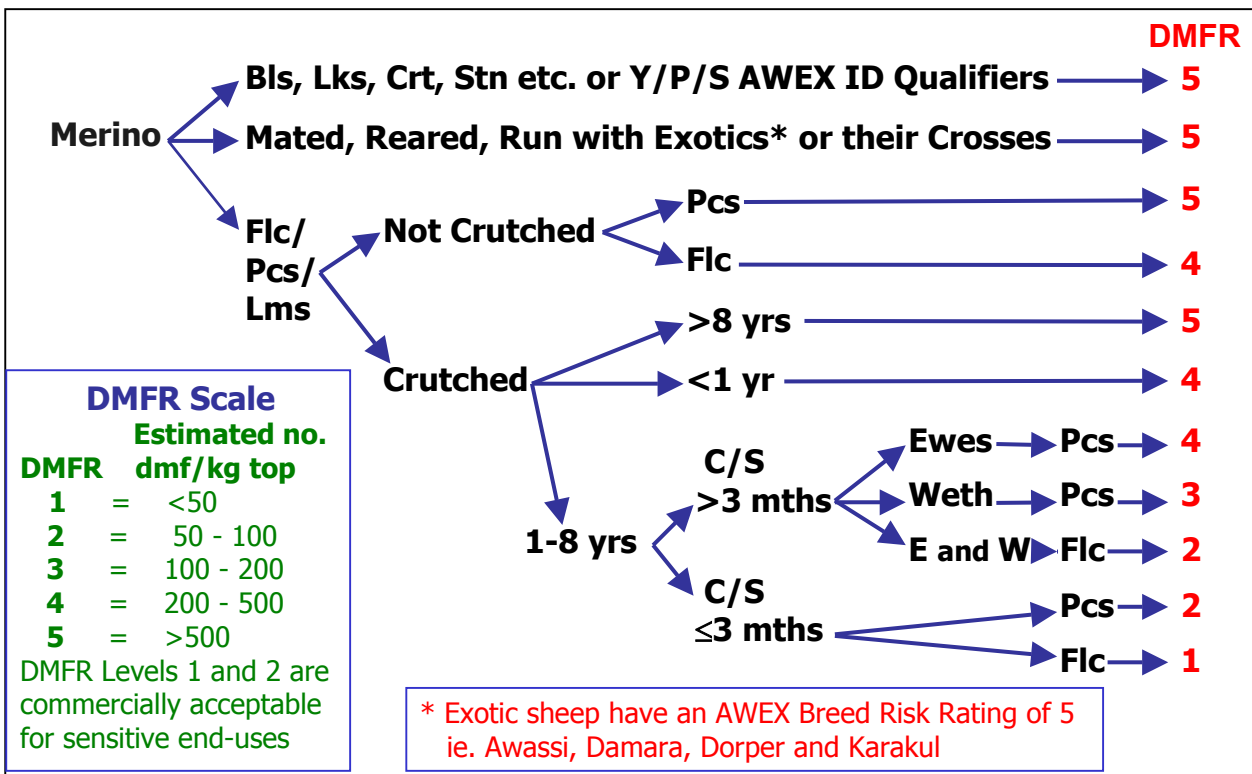
The DMFR has a scale of 1 (best) to 5 (worst), with Risk Factors 1 and 2 most suitable for sensitive end-uses. The same benchmark (i.e. 100 contaminant fibres/kg) is used for both dark and medullated fibres. In wool top, it is measured as dark and/medullated fibres per kg (dmf/kg).

Validation trials using core samples of known origin and history were conducted to provide a basis for refining the DMFR scheme and to provide data to determine a sampling regime for future random testing. Random testing would ensure the integrity of information declared by woolgrowers and provide broad industry statistics for dark and/or medullated fibre contaminants.

The results of the validation trials confirmed that a core sample is suitable for the measurement of dark and/or medullated contamination caused by contact between Merinos and exotic breeds. In addition, the results showed that all forms of direct contact between Merinos and exotic breeds or their crosses presented a very high “risk” of contamination. Direct contact includes mating, run in the same paddock (whether this contact is deliberate or accidental), and rearing an exotic cross lamb. Note, the trials also showed that Merinos that had been run in a paddock *next to exotics* did not have contamination levels above that of Merinos that did not have contact with exotics.

Figure 2 shows the DMFR scheme presented as a decision tree, which involves a series of questions with a number of potential answers (ie. branch points). Follow-on questions branch in response to the resultant answers. This process is continued until all relevant factors have been considered, with the “Risk” then calculated.

Figure 2 Merino Dark and Medullated Fibre Risk (DMFR) Tree



It is important to note that all four exotic breeds (Awassi, Damara, Dorper and Karakul) presented a high risk of contamination and thus Merino wool that had been in direct contact with these exotic breeds is allocated a DMFR value of 5. By comparison, Merino wool from adult ewes and/or wethers that had no contact with exotics and had been crutched within three months of shearing would incur a DMFR of 1 for fleece wool.

Implementation of the DMFR Scheme

The DMFR declaration will be voluntary. A grower may choose to declare, all, part, or none of his/her clip. However, if a grower chooses not to declare a line of wool, not declared will be reported on the certificate and in the sale catalogue.

The scheme is designed to protect the high reputation of the white Australian Merino clip and as a consequence, the price premium that it receives over wool from South America/South Africa will be maintained.

It is intended that DMFR scheme commences in July 2004. Prior to its introduction, seminars and educational programs are planned to guide and promote the DMFR vendor declaration. A proposal is being prepared to seek AWI financial support for this critical aspect of the programme.

For Further Information

Please contact the Project Leader, Kerry Hansford (0429 954 344) or myself for any further information.
