

THE IMPACT OF CLIMATE CHANGE ON THE PRODUCTION ADVISORY SERVICE OF THE PRIMARY WOOL INDUSTRY

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ABSTRACT

This paper focuses on aspects in the Code of Best Practice for Wool Sheep Farming in South Africa, assessment of producers against the Code and vendor declarations. Subsequently has a National Development Programme for Wool Sheep Farming in SA been finalised in 2009. This will guide the Production Advisory Service into the future within an environment where climate change has become a topic of scientific discussion and political instrument. Finally will consideration be given to eco-labelling and its relevance to the primary producer and the NWGA Production Advisory Service.

1. INTRODUCTION

"Wool runs on grass". It is renewable, sustainable and natural.

The South African wool clip is generally produced under extensive farming conditions and therefore totally dependent on climatic conditions. More than 90% of the SA clip of just below 50 million kg / annum is exported to mainly countries in the Northern hemisphere. Some of these export destinations have strict product standards in place, because many consumers from these destinations care how things are produced. International labelling requirements are slowly evolving into eco-types, considering principles contained in standards and procedures of Good Agricultural Practices (GAP) initiated by Euro-Retailer Produce (EUREP) Working Group. EUREPGAP was initiated in 1997.

These international developments have definite implications for the textile industry, including wool, and for the Primary Wool Industry. All efforts are aimed at decreasing the effect on the environment and we as humans who live in it.

2. CODE OF BEST PRACTICE

The NWGA has been a leader in the extensive livestock farming industry to develop a Code of Best Practice for wool sheep farming in South Africa. This followed the adoption of a resolution at the NWGA National Congress in 2007 requesting the development of a Code to benchmark quality raw wool production standards against international criteria.

The Best Practice Reference Manual for Wool Sheep Farming was subsequently developed, providing a framework of best practice concepts for wool sheep farming in SA. The main objective is to ensure sustainable farming practices that incorporate animal welfare, environmental conservation, social responsibility and optimum production with reference to appropriate legislation that apply to producers.

2.1 Support to Develop the Code

The document was compiled with extensive input from the following institutions:

- Cape Wools SA
- NWGA of SA
- Agri SA
- Provincial Dept. of Agriculture (Western Cape: Elsenburg)
- National Dept. of Agriculture (NDA)
- National Cleaner Production Centre of SA (NCPC)
- South African Veterinary Association (Livestock Health and Production Group)

- Cape Nature
- African Large Predator Research Unit (ALPRU)
- Woolworths
- Industry Workshop Task Team (2006)
- Biodiversity and Wine
- Green Choice

Other appropriate role-players will continuously be involved and the document will be updated on an annual basis as needed.

2.2 Principles Contained in the Code

The manual focuses on the responsibilities for the welfare of sheep and the environment dealing with the following:

- Provisioning of adequate nutrition for maintenance, growth and reproduction of livestock.
- Prevent pain, injury and disease through good animal health practices.
- Provide an environment for sheep to express natural behaviour
- Protection from fear and distress
- Protection from predation
- Protection when exposed to life threatening weather conditions
- Controlled use of animal health remedies and prevention of exposure to unnecessary or illegally imposed toxins.
- Natural resource protection and management
- Social / Ethical responsibility of producers

More information on this Code can be obtained from the website: <http://www.capewools.co.za>

It should be noted that the only prescriptive measure currently contained in the Code relates to the mules operation, which must not be practiced in South Africa. Wool produced from sheep that have not been mulesed is a prerequisite from certain international clients, making the SA clip well-sought after in any market.

3. ASSESSMENT AGAINST THE CODE

The NWGA (with support from the University of Pretoria, AEERD) has developed an assessment tool to measure producers' compliance against the Code. Although in its development stages, more than 320 producers have already completed this assessment.

3.1 Assessment and NWGA Production Advisory Service

A computer programme has been developed to process assessments completed by producers and reflect the results on a regional, provincial and national basis. The results will therefore assist the individual farmer to evaluate himself against the Code and identify where his/her practices could be improved.

The Production Advisor (PA) will be able to obtain information on what practices need to be improved and set priorities on a regional and provincial level. This will assist the PA to compile a focussed development programme to improve wool sheep production practices.

3.2 Value of Assessment

3.2.1 Follow-up assessments will indicate what progress has been made on an individual, regional and provincial level towards compliance of the Code.

3.2.2 Positive assessment results could be used to market the SA clip internationally.

3.3 Vendor Declarations

CWSA and the NWGA have engaged with all Wool Brokers in SA to request their assistance to have, as far as possible, wool producers sign a declaration stating that they pursue the

principles contained in the Code of Best Practice. A separate declaration is also to be signed confirming that mulesing is not practiced on the farm.

These declarations are submitted with the documentation contained in the clip advice when wool is delivered to the broker. Declarations are subsequently indicated in auction catalogues for information to buyers. Buyers can therefore buy wool that is declared to be mules-free, should this be a requirement by their clients.

CWSA has also involved an independent third party (Afrisco, a SA certification authority) to confirm mules-free status by visiting a random sample of producers that have signed the declaration for mules-free wool. The outcome showed 100% compliance, indicating that all farmers from the sample that signed the declaration have indeed not mulesed their sheep.

This outcome is already used effectively to market this SA clip.

4. ECO-LABEL

Eco-label is a voluntary scheme to encourage businesses to market products and services that are kinder to the environment. The European Eco-label was established in 1992. Eco-labels are awarded by an impartial third-party to certain products and services that are independently determined to meet environmental leadership criteria.

There are many different voluntary (and mandatory) environmental performance labels and declarations. The International Organisation for Standardization (ISO) has identified three broad types of voluntary labels, with ecolabelling fitting under the Type I designation:

Type I – a voluntary, multiple criteria based, third party program that awards a licence that authorises the use of environmental labels on products indicating overall environmental preferability of a product within a particular product category based on life cycle considerations.

Type II – informative environmental self-declaration claims.

Type III – voluntary programs that provide quantified environmental data of a product, under preset categories of parameters set by a qualified third party and based on life cycle assessment, and verified by that or another qualified third party.

4.1 Purpose of Eco-Labeling

The purpose of Eco-labelling is to create a market advantage for environmentally preferable products. Eco-labels inform buyers accordingly and aim to cause a displacement of products with lesser environmental performance.

The criteria contained in an eco-label are negotiated with the labelling authority of the country where most of the product is to be marketed. The level of environmental stringency chosen should be as such that about 20% of the population of products will immediately be able to meet the criteria.

The ISO has developed a series of standards related to environmental labels i.e. ISO 14020 (all labels); 14021 (Type II); 14024 (Type I); 14025 (Type III).

4.2 Eco-labels and the Primary Wool Industry

Eco-labels generally revolve around manufactured products by the secondary industry, consisting of various components that eventually make up the final product. The different components in the final product need to comply to set criteria of the chosen label.

For the primary wool industry this implies that farmers need to produce raw wool that meets the criteria set out for a specific label. The EU Flower Textiles Criterion 5, by example, is applicable for Greasy Wool and other keratin fibres (including fibres produced from sheep, camel, alpaca, and goat).

This criterium basically sets limits on parasitic insect residues in the raw product on the following:

- Organochlorines
- Organophosphates
- Synthetic Pyrethroids
- Insect Growth Regulators

The IWTO Draft Test Method 59 is prescribed for the above.

4.3 Challenge For the Primary Producer

Various Eco-labels have been developed internationally. These labels require that the raw product (greasy wool) must comply with standards set for minimum residual levels of pesticides. Wool furthermore is purchased in large quantities and blended to make up the volumes required by processors. It is therefore a challenge to the primary industry to provide credible proof that the clip complies with these minimum standards, produced by more than 7 000 commercial producers and 846 communal shearing sheds in SA.

4.4 Assisting SA Wool Producers to Meet Greasy Wool Requirements

A project was launched to do pesticide analyses of the SA clip through the ComMark Trust Regional Standards programme: "Making trade standards work for the poor". The project has been identified from the need to develop an integrated and environmentally friendly pest management plan to improve and sustain the marketing of the Southern African wool clip.

As part of the overall project, additional funding was secured from ComMark specifically related to the emerging sector as a possible basis for promoting these wools in the international market for Fair Trade type agreements. The clip produced in SA by Emerging Wool Sheep Farmers is just over 4 million kg/annum and represents about 12% of the SA National clip of approximately 48 million kg.

The objective of the project is to continuously monitor the SA clip for relative movements regarding residues of pesticides used for external parasite control and evaluate these levels against EU environmental specifications for raw products entering this market.

4.4.1 Wool Sampling

226 Wool samples were collected during the 2008/09 marketing season to obtain test specimens to represent geographical areas where wool is produced in the former Transkei and Ciskei. Sample collection was done by BKB, one of the Wool Brokers.

A total of 10 samples each from 10 catalogues were selected and analysed by the Wool Testing Bureau of SA. Analyses were conducted by the CSIR in Port Elizabeth (Fibre and Textile Industrial Support Centre). Cape Wools SA facilitated the process and assisted with data analyses and –interpretation.

The test sample representing the clip from the emerging sector was limited to available funding and due to the expensive and complex nature of analytical procedures for these tests. Special equipment was purchased to perform these tests to comply with International Wool and Textile Organisation (IWTO) test method 59. CSIR is now in a position to support similar initiatives in future.

4.4.2 European Union (EU) Ecolabel Limits

The sum content of substances within the following pesticide classes are not to be exceeded for compliance with EU Ecolabel.

- | | |
|----------------------------|---------|
| • Organochlorines | 0,5 ppm |
| • Organophosphates | 2,0 ppm |
| • Synthetic Pyrethroids | 0,5 ppm |
| • Insect Growth Regulators | 2,0 ppm |

4.4.3 Test Results and Interpretation

Test results are included for samples taken from ten catalogues.

The results reflect the following for emerging wool producers in SA:

- No organochlorine residues were found in any of the samples analysed for wool from this sector (former Transkei / Ciskei).
- A large proportion of the samples analysed contained residues of the pesticide Diazinon, the most popular ecto-paracide (organophosphate) in SA. Residue levels were, however well below currently specified maximum residual levels for EU Ecolabel.
- Residual levels for Synthetic Pyrethroids are also confirmed to be extremely low and well within target limits set for EU Ecolabel. A small number of samples tested indicated residue levels of Cypermethrins above maximum specified levels for EU Ecolabel.
- Insect growth regulators were largely absent in any of the samples tested.

4.4.4 Outcomes

- From the above it is clear that wool produced by emerging wool producers in the former Transkei and Ciskei, generally comply with existing standards set for EU Ecolabel. These wools can therefore be marketed accordingly in the international market.
- The small percentage of test results indicating above recommended maximum levels of Cypermethrins creates an opportunity to develop and implement an awareness campaign amongst emerging producers on the role and importance of withdrawal periods.
- Extension programmes should focus and emphasize on compliance by producers to requirements indicated on product labels (i.e. withdrawal periods, etc.) when administering respective pesticides and the application thereof in practice.
- The project funded by ComMark has contributed towards the establishment of the capacity and expertise in SA to continue with these tests in future at the CSIR (Fibre and Textile Industrial Support Centre) as needed.

Tests are currently being conducted on wool produced by the commercial sector. This is funded by CWSA and results are still awaited.

5. NATIONAL DEVELOPMENT PROGRAMME FOR THE PRIMARY WOOL INDUSTRY

The NWGA has taken a decisive step to compile a development programme for the primary wool industry. This will subsequently provide a clear road map on where the primary industry wants to move in the next 10 years and form the basis of a programmed extension approach.

A draft program has already been developed, which is aligned with the National Livestock Strategy (NLS). The NLS, on the other hand, is aligned with the Presidential Imperatives and the Strategic Plan for South African Agriculture.

5.1 The Wool Production Profile

South Africa's wool production is largely of a merino character, i.e. suitable and highly sought after for use in the apparel sector. From a peak production level in 1965/1966 of just less than 150 mkg (greasy weight), production has since declined gradually to around current levels of 48 – 50 mkg.

The rate of decline was particularly strong from about 1990 onward, due to a variety of reasons, the most important being:

- Large scale conversion of small stock farm land to game farming and conservation areas.
- Poor returns as a result of low international prices.
- Better returns from mutton and lamb production.
- Increasing impact of damage causing animals.
- Gradual decline in average fleece weights associated with genetic "fining up" breeding policies.
- Impact of climate change.

During the past 2-3 decades, there has also been a structural change in the South African wool processing industry. Due to a gradual decline in the early stage wool processing sector in South Africa, large surpluses of grease wool have become available for export on an annual basis. Exports have become grease wool dominant. Exports of wool (unprocessed as well as semi processed) earn foreign earnings of well in excess of R1 billion annually.

The profile of the South African wool clip makes it particularly suitable for a large range of consumer apparel products. The bulk of the clip measures between 18 and 22 micron, ideally suitable for menswear, ladieswear and knitwear. Staple lengths, due to different shearing patterns in the different production areas, vary from less than 50-55mm (i.e. suitable for woollen processing) to between 60-90mm (suitable for spinning into yarns for the worsted trade).

5.2 Strategic Position of the NWGA Production Advisory Service (PAS)

A situation analyses was done from information obtained from various sources, including:

- Areas in each province where sheep numbers are concentrated.
- Vegetation types of South Africa (the fodder production sources available for production)
- Distribution of sweet-, mixed- and sour veld in SA
- Degree of combined degradation (soil and rangeland)
- Land cover in SA
- Arable land of SA
- Biomes of SA (linked to provincial boundaries)

From this basic information listed above and other sources, it is clear that the PAS is not in a position to follow the same strategic approach in all provinces and different ecological farming areas. The PAS needs to consider different strategies for improved wool sheep production and the following examples are provided for illustration:

5.2.1 Extensive farming areas of the Succulent Karoo are generally stocked to capacity within the limits set by grazing capacity. The focus for the PAS should therefore aim at improving existing production practices, rather than promoting increases in stock numbers (i.e. woolled sheep). This involves areas of the Eastern-, Western- and Northern Cape.

5.2.2 Areas where arable land (dry land and irrigation) are utilised for cash crop production necessitates another approach. Various factors (i.e. input costs, low product prices, exchange rates, droughts) have resulted in certain cash crops to become uneconomical to produce. Livestock farming is subsequently becoming a more viable option in many of these areas. Wool sheep farming is therefore an option to be considered where rotational cropping and livestock farming can lower risks and improve farmers' income.

This requires a different approach from the PAS, also necessitating proper consultation and cooperation with other stakeholders, including Grain SA, RPO, relevant departments, cooperatives and others.

6. CONCLUSION

The NWGA has made concerted efforts towards minimizing the impact of Wool Sheep Production on the environment. Wool Sheep Farming in South Africa is generally an extensive farming enterprise. In many farming areas where extensive farming on veld is the only economic option, wool sheep production makes a significant contribution to the income and economies of these rural areas and towns, including its contribution towards job creation.

More than 90% of the wool produced in SA is exported to foreign countries in the Northern hemisphere, mostly as greasy wool. Stricter measures are continuously considered by these export destinations and the NWGA PAS is committed to advise and motivate producers to consider these measures in their management. Currently the most important consideration revolves around the use and application of chemicals to minimize the levels in greasy wool. Production practices and withdrawal periods after application of various remedies are the most

important. Other production practices, animal welfare, resource conservation strategies and environmental management initiatives, complement towards the Wool Industry's approach.

The objective therefore for the NWGA PAS is to ultimately follow a programmed extension approach to educate producers to manage their production towards achieving Eco-label compliance. This also calls for close cooperation between primary producers and the secondary industry.

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