

“Managing Wool Quality”

By Robert Pattison, Regional Manager, Otago

Wool is only one part of the equation for sheep farmers. The present message to farmers is clearly more lambs, more profit. Ewes are expected to rear their own body-weight in lamb production. This is determined by genetics within a commercial flock as well as farm management skills, stock health, pasture quality, pasture species, and feeding levels. Fortunately the management strategies for producing healthy lambs and high quality carcasses, also produce good quality wool.

A question put to me recently by a journalist friend, was – Why should sheep farmers even consider improving the quality of their wool clip? I believe the answer is simple. As mentioned above, the management strategies for producing quality meat and wool are similar. The present value of wool from a strong woolled breed is between \$10 and \$20 per head, depending on quantity and quality. The value of wool is presently between 10% and 25% of gross farm income. The time spent on wool specific activities when selecting rams and replacement ewes, along with shearing, crutching and dagging, dipping and selling is possibly less than one or two months per year. The value sheep farmers receive for time invested is very good indeed. Possibly in the range of \$600 to \$1200 per day.

What are the issues for N.Z. strong wool producers to consider in the future in order to improve the quality and value of their wool clip?

Key issues for producing “Quality Wool and added Value”

Fineness, Bulk, Colour and Staple length and Strength.

- Finer woolled sheep generally produce lower fleece weights. They also tend to have bulkier slower drying fleeces and are generally more susceptible to fly strike and yellow discolouration. Ram breeders need to monitor the wool from their stud rams for colour susceptibility.
- Premiums identified in the past from auction sale data analysis for medium and high bulk wools, have not been sufficient to compensate for the loss of fleece weight. My view is the auction price and data analysis has never been particularly accurate. Perendale, Cheviot and Poll Dorset breeds produce bulky wools. We also have the Grow Bulk Breed which has been developed using wool levy funds to fund the R & D for this project. Rams are now available to commercial sheep farmers.
- Wool production statistics from Lincoln and Leicester breeds need to be more clearly identified and analysed from wool sale data. An analysis of both auction and private sale statistics would be needed. This would show more accurate figures on wool production from Romneys, Coopworths and Perendales. This exercise would be quite difficult to do by just looking at the wool, because many Romneys, Coopworths, Border/Romney crosses produce Leicester type wool.

Knowing the type and quality of wool produced is extremely important as a management tool for sheep farmers. Especially for helping to make informed decisions regarding shearing time and frequency, wool-handling requirements and knowing the market value

of their woolclip. A well-informed seller is in a stronger position to negotiate prices with a potential buyer or broker when setting reserves.

- Having a database of total annual wool production that shows an analysis of;
- Categories and quantities of full fleece, (good, average, poor colour, sound/tender, soft/hard cots), Early Shorn, Second Shear, Lambs wool. (Oddments), 1st Pieces, Necks, Moity backs, Bellies, Belly fribs, 2nd Pieces/Lox, Eye clips, 1st Crutchings, 2nd Crutchings, 2/S Bellies/Pieces, Lambs Bellies/Pieces, Stains, Dags, Black wool, as well as Slipe wool.
- Each of the different categories should be identified by specification. i.e. micron, staple length, colour, (YminusZ, good, average and poor colour), bulk, cm³/gm, high + 26, medium 25 – 22, low, below 21), vegetable matter %.
- Costs of harvesting and selling, dagging, crutching, shearing and wool-handling, packaging, transport, brokerage, insurance, testing and wool levy.

Then farmers will be in a position to identify;

- If they are producing a large percentage of poor quality low value wool, the percentage of wool being down graded into low value oddment lines.
- The ratio of fleece to oddments and off-sorts.
- Gross and net value per head by stock class, lambs, hoggets, ewes.
- What markets and end uses their wool is suited to. They would be able to make informed decisions about which markets to target in the short medium and long term. What the potential is for increased demand and \$value, and which markets are the most affluent. Which markets to avoid because of future uncertainty and lack of demand.

Clip Preparation

The preparation of most crossbred wool clips is inadequate. The clip is either over prepared or under prepared.

Most of the focus is related to skirting levels for necks and 1st pieces. Unfortunately there are many wool clips that are overskirted and underskirted at the same time. We see fleece lines with skirtings and faults that have been left in, and we see lines of pieces, necks and backs from the same clip with far too much clean fleece wool in them. This shows the fleeces have been inconsistently skirted.

The reasons for the inconsistencies are many and varied. Shed facilities, lighting, sheep presentation, the attitude and wellbeing of the shearing team. The people in the team can have all the information, knowledge and skills to do the job well, but if they have poor leadership, unclear instructions about what is expected from them, and they have a poor attitude and are in a difficult frame of mind they won't do a quality job. The unfortunate reality is that farmers will pay the same harvesting cost for a good or poor job.

For the main fleece lines we see a few "off type fleeces" in most clips, (strong lustrous or bulky fleeces), and the wool-handlers are told to leave them in the main line as there are insufficient to make a separate line. The cost of binning is too expensive as there are no significant premiums or discounts for keeping them separate.

This problem is not created by the wool-handlers or farmers alone. It is the Brokers, Private Merchants and Exporters who give ambiguous advice, "if there is no apparent price difference in the market", then leave the off type fleeces in the main lines. This is irrespective of the end uses and markets for our wool.

The fibre properties for machine tufted and woven carpets, or hand knotted rugs are quite different. Added to this the markets where our wool is processed are vastly different, and if you add in the currency variables, there are a large number of factors affecting the value of our wool in NZ.

The off type or poor colour fleeces and oddments may go to shipments that end up in different mills in the UK or Europe, while the good colour fleece lines could be shipped to mills in NZ, Australia or the US. Vastly different markets and currency values.

Exporters, Brokers and Yarn Processors are concerned with the following issues:

Dark fibre contamination.

Crossbreeding with meat breeds, such as Texels, Finns and East Friesians will produce harsher handling, poorer style wools and increase the quantity of black fibre contamination in the New Zealand woolclip. The percentage of black fibre in our crossbred clip may be increasing due to crossbreeding. But I believe the problem is becoming more apparent to buyers of greasy wool, with the change in shearing practice due to the financial incentive from Meat Companies for shorn lambs. This wool has been traded as Slipe in the past, but much of this wool is now being traded as greasy wool through Auction and Private Merchants. Buyers and processors of Slipe wool were aware of the black fibre content and used the wool accordingly.

Contamination from thistle heads.

Woolbuyers, yarn Spinners, carpet manufacturers and upholstery weavers are concerned about "thistle contamination" in deliveries of NZ wool. We risk losing the commitment from these important customers if we continue to ignore the problem. Thistles will be a real problem again this season, partly because we've had several dry years.

End uses for NZ's crossbred wool are:

Traditional

- Carpets (machine made) tufted, axminster and wilton. Require wools less than 38 micron, bulk 24-28cm³/gm, low lustre.
- Handknotted rugs/carpets. Micron is not an issue, require lustre and very good colour.
- Handknitting yarns. Require wools less than 33 micron, bulk 26 – 30cm³/gm and very good colour.
- Bedding, there are a wide range of products, from blankets, duvets, pillows, mattress overlays, mattress fillings/linings and futons (for Japan). Micron and bulk can be important for some of these products.
- Blankets, less than 30 micron, bulk 24 – 30 cm³/gm. Fine crossbred lambs wool is suited to this market, because of the low levels of vegetable matter contamination, kemp and medullation. Some blankets are made from strong wools 38 micron

shears and fleece for weft yarns, and finer wools less than 30 micron for the warp yarns.

- Wool filled products require wools less than 35 micron, high bulk 28+cm³/gm and very low kemp and vegetable matter contamination. Obviously Down cross type wools.
- Furnishings. Upholstery and curtain fabrics. Micron is important for worsted yarns, less than 32 micron. For the more heavily textured woollen spun yarns, wools less than 35 micron are okay.

New product innovation for NZ crossbred wools;

- ⇒ Non woven products. One step processing technologies for scoured wool, eliminating the need for carding, spinning and weaving processes that are labour intensive and require high levels of capital investment for machinery. Making N.Z. wool products more competitive in the market place. Also adding new product opportunities.
- ⇒ Fibre differentiation. Special treatments to meet the specific requirements of individual processors, avoiding the need for substitution of competing British, European and South American wools, or alternative fibres.
- ⇒ Smart wool fibres for carpets rugs and fabrics. Special fibre treatments to produce carpets, rugs and fabrics that can automatically change colour and smell. Or to create different moods in interior spaces as the environment or atmosphere changes.
- ⇒ Keratec Technology, this is new technology that dissolves the wool fibre to create different protein fractions that can be reconstituted into high value products and applications for pharmaceutical and medical uses. For example wound dressings, artificial skin substitutes and drug therapies. Cosmetics, health, hair and skin care treatments.

While these are a few of the opportunities for improving the value and end uses for N.Z. wool, we have to ensure the new innovations are economically viable to the people and companies who invest in the new technologies.

Attitude

The NZ sheep industry needs to develop a **vision** for the future. In my view the sheep industry continues to focus on efficiency of production and economy of scale. On high volume commodity markets for wool, skin and meat. The ultimate **goal** for sheep farmers must be to double or triple the value of sheep products by the year 2020. While there are efforts within sectors of the wool and meat industries to add value through innovation and targeting niche markets where the worlds wealthy populations live, the real **challenge** is to see past the existing structures and services, that trade wool and meat, to be manufactured into carpets, rugs, chops, legs and loins. We must learn to fully utilise the huge investment in science and new information and technology systems to exploit the world's demand for fibre, pelts, meat and protein based products. Perhaps what we need most of all to meet the challenges of the 21st century is creative researchers and entrepreneurs.