

# Rumpelstiltskin

## Suri fibre Classing and Baling days

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Suri produce a rare beautiful fibre unlike that from any other animal. The best known suri trait is the outstanding natural lustre making it able to achieve effects in the finished product that require chemical treatments on other fibres. Less obvious to the naked eye the structure of the suri fibre shaft is very smooth with a lower scale relief than most fibres, this translates directly into the exquisite silky handle of the fibre. While these qualities and its uniqueness give suri fibre tremendous value, it also means there is very little known about the best way to process it and there is often a reluctance to try with suri as it is something new.

The “Surissimo” trial, completed in 2010 went a long way to raising the profile of suri fibre and dispelling the myth that “you can’t process suri fibre”. The success of Surissimo was the momentum behind Rumpelstiltskin, a project designed to take the next step in processing suri and test the commercial processing options available in New Zealand today. A grant from the Sustainable Farming Fund (SFF) has been secured for the project that will include fibre collection, scouring, spinning, weaving and most importantly education and support for suri breeders.

The first stage of fibre collection took place in November & December 2012 with classing and baling days being held in the North and South Islands. This was the first time such an activity had been held for suri breeders and so was a learning experience for all those involved. There were a good number of suri breeders electing to take part with 28% of New Zealand suri herds represented and over 2 ton of fibre collected.

The Rumpelstiltskin project was looking for a tight specification of white suri with an average micron of 22.0 $\mu$  to 23.9  $\mu$ , an SD under 5 $\mu$ , and length 80mm – 140mm. The amount of variation in the fibre has an impact of the handle of the final product so it was important to keep specifications tight. As there was a certain amount of cost and time involved in setting up and executing these weekends for both the organisers and the breeders, it was decided to class and collect all grades of suri fibre with the hope that buyers or other projects might be found for the specifications not required by Rumpelstiltskin. In total 63 classes were available.

All suri breeders and owners (that we knew about) were invited to attend a weekend, the only rules were you had to attend one of the short tutorial sessions and you had to come yourself – you couldn’t just send your fleeces for us to do. As there was an important educational aspect to the weekend

nothing would be gained if we did all the work, not to mention the large amount of time this would require.

The weekends were each split into 4 sessions of half a day, meaning breeders didn't need to attend the whole weekend if they only had a small number of fleeces. Each session started with a short introduction to the fibre attributes we wanted and those we needed to avoid. To illustrate these traits small samples of fibre that exhibited either lustre or chalky fleece, colour contamination, strong primary fibre and uniformity of micron were used to train attendees on the good and bad characteristics to look for when classing and skirting.

We would then class and skirt a fleece as a group to start then break off into smaller groups, white on one table and colours on another to minimise contamination. Most fleeces came unskirted, which was understandable since most people had been doing nothing except storing the fleece straight after shearing, however it does take more time and we ended up with four very full on days.

Very quickly we worked out an order of things to check – length, tenderness, suri style/nourishment, colour (contamination), and micron.

Length is a difficult one for breeders to get their head around, why had we set the maximum length at 140mm? The simple answer is that is what the spinning mills will process, they are already leery enough about processing suri fibre (because it is not sheep wool) so to try and get a much longer length than they usually process is too bigger battle at the moment, we know we can do up to 140mm because it was successful in the Surissimo trial. So, sadly many beautiful fleeces went straight to the overlong bag if they exceeded our specification. Remember that fleece length is a management issue – in a commercial fibre production situation birthing and shearing would be timed to produce the optimal fibre length.

Some good news on the horizon is we may be able to carry out some trial work soon using overlong suri so keep an eye out for more news on that.

Tenderness in the fleece can automatically downgrade it to seconds. If the fleece staple is snapping in half it will mean that the length is under the specification minimum.

Suri style and nourishment was an important attribute when selecting fleeces as the inclusion of a dry chalky fleece, or fleece without the smooth suri fibres would affect the performance of the final product. In order to be able to command the top prices we need to produce fabrics that display the beautiful lustre and handle that makes suri so luxurious and unique. Other work we are doing with suri is indicating that the fluffy or cross type suri fleeces may work well in knitted products so we hope to expand our classing next year and develop this further.

Categorising the colour correctly and consistently is vital. White must be pure white with no coloured fibres as the dye uptake will be different across different colours and can appear as smudges in the fabric. Although we will probably end up combining the light and mid fawns it is much better to do this

just before scouring, then we will know the “recipe” and be more likely to reproduce the same colour, the same goes for creating grey from black and white.

Classifying average micron and uniformity of micron (SD) is the most difficult part of classing. A midside measurement is a great start, but the fleece still needs to be inspected to assess the micron across the whole fleece. Some animals have excellent uniformity across the fleece and some only have a small area on the upper mid blanket, the rest needs skirting out. Where there was no micron test available we had to make an eyeball assessment, to help us do this we had cards with known micron samples that we could use as a guide. To become proficient at assessing micron you need experience, start looking at as many fleeces as you can and test yourself.

The other aspect of micron is how much coarse primary fibre is present. It doesn't matter what the average micron is if it is full of bristles then it must be downgraded to seconds.

We also found fleeces that needed to be downgraded due to shearing and contamination issues. Doing your own shearing might sound like a great idea to save money but we really noticed the difference in fleeces from a professional versus the amateurs. Some fleeces were downgraded for excessive second cuts and shearing blows through the middle of the staple. Shearing shed hygiene was also an issue with fleeces being downgraded as they were too contaminated with coarse fibres from another animal or another colour. If you are serious about producing quality fibre you need to use the experts and plan your shearing well so the best quality and lightest colours are shorn first.

Once we had assessed and classed the fleece we skirted out anything not meeting that classification and placed it in bins separating prime and seconds. We allowed a maximum of 10 mins per fleece to try and keep on time and get through tonnage. The bins were weighed in and recorded against each breeder and class. Breeders could then choose if they combined their fibre into the bales or took it home for their own projects.

The next step in the trial is to get the fibre scoured. We have nearly 60kg of Rumpelstiltskin grade from New Zealand and we are expecting a contribution from Australian suri breeders that will take us over 200kg. This fibre will be scoured at a commercial scour before going to a mill to be made into tops and then spun into fully worsted yarn. A woven fabric is the end goal, and our plan is to provide all those who contributed fibre with samples and information that can be used to promote the wonderful suri.

We feel the weekends were immensely successful. The breeders who attended gained valuable information and skills that will help them, not only with preparing next year's fleeces but with their breeding programmes and farm management. We collected data that will be very useful in predicting how much suri fibre is produced in New Zealand. We would like to express our thanks to all those breeders who attended the classing and baling weekends and especially those who have donated fibre to the Rumpelstiltskin project.

Next year we hope that even more breeders come, and bring all of their fibre. The bottom line is we need more suri fibre, so we need more people breeding suri.