

# Alpaca Testing Laboratory Testing Logistics

Alpaca Testing is performed by our Wellington Laboratory. Samples are managed through a production line testing system to maximise efficient throughput without comprising test quality.

## ORDERS

Orders are raised through [SGS Online Store](#) and managed by our customer service team from the time the order is raised. Purchasing instructions on how to use the online shop can be found [Here](#). To avoid delays, samples should be packaged and sent as per the following [WTS ONLINE: Preparation and Packaging of Samples for Shipment to SGS](#). The option of sending an excel file with sample animal descriptions will minimise errors and benefit sample management. If samples do not arrive in 21 days an automated notification is sent requesting consignment delivery details which allows investigation of the delay and an estimated delivery time.

All queries are managed by our customer service team and these can be directly raised by emailing: [woolonline@sgs.com](mailto:woolonline@sgs.com)

## SAMPLE RECEIPT

On sample receipt, notification is sent verifying arrival, and for orders less than 100 samples the standard turnaround time is 3-5 working days. Larger groups may take longer. Samples are prepared and managed for testing based on the information provided in the order test request. Animal data is uploaded into our reporting system and barcodes generated to retain the integrity of the sample ID during testing.



## MEAN FIBER DIAMETER PREPARATION AND MEASUREMENT

Samples for OFDA100 measurement are prepared by subsampling enough tufts from the available sample mass to produce an adequate amount of fiber for testing. A base cut or butt cut, considered as a 2 mm section cut from the base end of the tuft, is taken using a pneumatic guillotine which produces snippets (Figure 1).



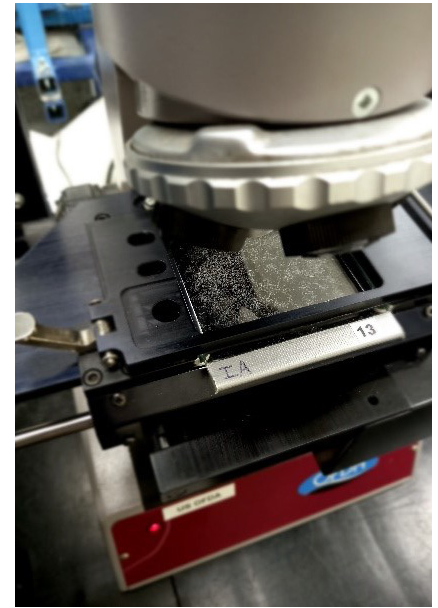
Pneumatic Guillotine (Figure 1)

The snippets are transferred to a stainless-steel thimble and washed and dried through a solvent scour which cleans them removing dirt and grease. The solvent scour is designed as a conveyor-based system to allow high throughput (Figure 2). Following solvent scouring the sample is transferred to a controlled conditioned room and allowed to stabilise under this regulated environment prior to OFDA100 measurement. The snippets are dispersed by a spreader with a glass slide placed underneath, so they are evenly spread over the slide for optimum presentation and measurement.



Solvent Scour (Figure 2)

The OFDA100 (Figure 3), an optical based instrument, produces results for mean fibre diameter (fibre thickness), curvature (similar to fibre crimp) and medullation (the number of hollow fibres). Technical information on these measurement characteristics can be found in our information bulletins: [OFDA100, Mean Fibre Diameter, Fibre Curvature, Medullation](#). The OFDA100 data or MES file is uploaded into the reporting system which automatically manages the data to produce the reportable outcomes and the fibre diameter distribution histogram [OFDA100 Histogram Definition](#).



OFDA100 (Figure 3)

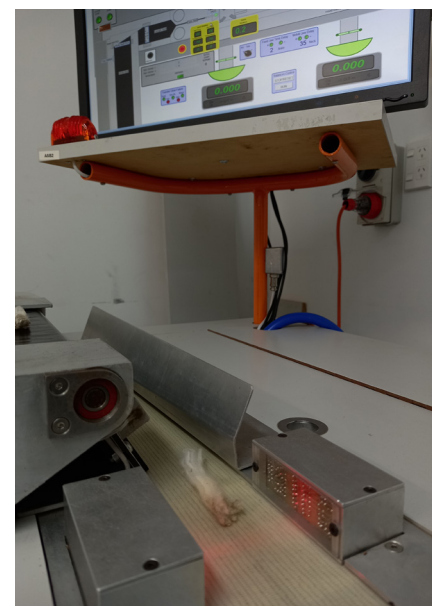
The minicore preparation is reserved for core samples or midside samples from sheep, and is the predominant method used for wool. Instead of a guillotine to prepare snippets, the sample is compressed and cutting tubes are pushed into the sample to produce core snippets approximately 2mm long. The process for cleaning and measurement is the same as the guillotine method.

## STAPLE LENGTH MEASUREMENT

Length measurement involves subsampling 5 staples from the available sample mass and measuring on the Automatic Staple Length instrument. Staples are placed on a conveyor belt and passed through a set of measurement optics which measures the staple length from tip to base (Figure 4). The result file is uploaded into the reporting system which calculates and reports the average Staple Length, Length SD and Length CV. Technical information on these measurement characteristics can be found from our information bulletin: [Length and strength](#)

## OFDA2000 MEASUREMENT

Where OFDA2000 measurements are requested, these are performed on a single staple randomly selected from the sample. The instrument was originally designed for field use to provide indicative information for flock improvement or objective classing but provides the advantage of producing a length-diameter profile. A staple is spread over a fibreglass slide and the instrument traverses the length of the slide to produce fibre diameter and staple length characteristics. The result file is uploaded into the reporting system which manages the data to produce the reportable outcomes: the fibre diameter distribution histogram and the staple length profile. Technical information on the OFDA2000 can be found from our information bulletin: [OFDA2000](#)



Staple Length Measurement (Figure 4)

## INSTRUMENT METHOD AND PRECISION

The different options for measuring fibre diameter and length from individual animal samples have different performance capabilities. These are summarised below:

TABLE 1: INSTRUMENT CAPABILITY AND PRECISION

USE	INSTRUMENT:	OFDA100		LASERSCAN		OFDA2000
		PARAMETER	BASE CUT +	MINICORE	BASE CUT	
Sheep fleece selection (lotting for sale or animal selection)	MFD			x		x
	SD, CVD			x		x
	curve			x		x
	medullation			x		
Alpaca genetic selection (EPD alpacas)	MFD	x			x	
	SD, CVD	x			x	
	curve	x			x	
	medullation	x				
Animal management	length/diameter					x
Overall precision (95% CL)*	midside MFD $\mu$ m			1.05		1.04
	midside CVD %			2.4		2.9
Measurement precision (95% CL) **	staple length mm	3				11

### NOTES:

\* overall precision of estimated sheep's fleece MFD & CVD, includes sampling

"The 2003 Australian Wool Innovation On-Farm Fibre Measurement Instrument Evaluation Trial"

"Part 1: Accuracy and Precision Trials" IWTO report CTF 01, May 2004

\*\* measurement precision for average of 5 staples measured on SLM, or single staple on OFDA2000

+ for genetic selection purposes the base cut method is more precise than using minicores, and significantly much more precise than using a single profile diameter measurement on OFDA2000

"Description and performance of the Agritest Staple Breaker model 2" IWTO CTF01, Nov 2002, and

"OFDA2000 Proficiency trials", Wool Technology & Sheep Breeding, 44, 1996

### REPORTING

On completion of testing and reporting, clients may access reports via the SGS result SharePoint platform. Notification of completion is sent by email with the inclusion of a verification code to authenticate your permission access (please check your junk folder if you haven't received it. A Microsoft account is necessary to access the reports).

All queries related to testing can be raised by emailing [woolonline@sgs.com](mailto:woolonline@sgs.com), and further information about our services are located on our website [www.wooltesting.sgs.com](http://www.wooltesting.sgs.com)

WHEN YOU NEED TO BE SURE

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