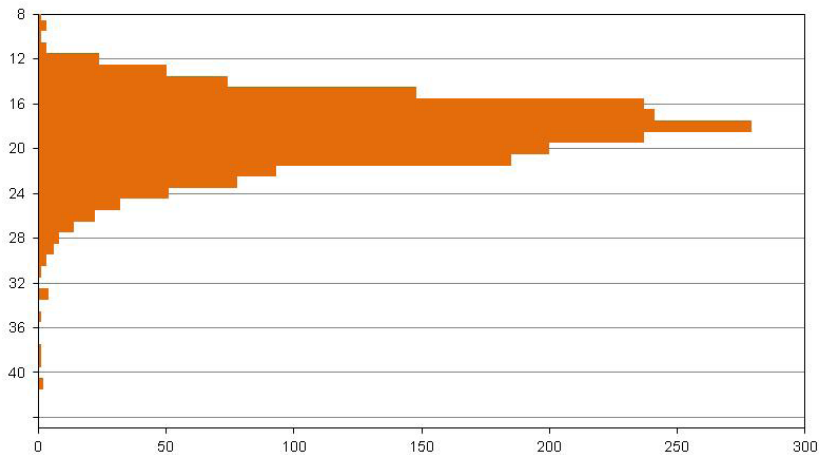


## FIBRE DIAMETER DISTRIBUTION



There has been rapidly increasing interest in diameter distribution data, which is of potential interest to the quality of spinning, as well as indicating the comfort characteristics of apparel wools.

Currently there are two alternative measurement systems available for IWTO certification of fibre diameter distribution characteristics of raw wool. Both have full IWTO test methods - Laserscan (IWTO-12) and OFDA (IWTO-47) (see [Info-bulletin 3.2](#)), and these appear to give reasonable agreement with each other on mean fibre diameter overall, although there may be differences on individual wools (see [Info-bulletin 3.3](#), [Info-bulletin 3.5](#) and [Info-bulletin 3.6](#)).

Both new systems can also be used on scoured wool and processed wool, and the reference method (projection microscope - IWTO-8) can also be used on tops, sliver and yarns.

Measurements from these instruments are now being used on a wider basis, enabling fibre diameter distribution data to become more widely available. As of the 2000-2001 wool season, all Australian wool, and New Zealand merino wool will be certified for mean fibre diameter by default on Laserscan, although OFDA results are also available. South Africa has also subsequently changed to the Laserscan default.

However, there are still no IWTO regulations to cover the certification

of diameter distribution parameters such as SD, CvD, or comfort factor (percentage of fibres below 30 µm), and this data can only therefore be reported for information. Further information on typical CvD and Comfort Factors for NZ merino wool can be found in [Info-bulletin 3.10](#).

The OFDA and Laserscan instruments may give slightly different results for SD, although the practical implications of the small differences noted have not been demonstrated. Over the 2000-2001 season, 4300 comparisons of CvD between the Laserscan & OFDA systems in use at SGS Wool Testing services showed an average difference of only 0.4% (see [Info-bulletin 3.5](#)). Since changes were made to the method of calibrating the Laserscan for raw wool measurement the average differences appear to have reduced to less than 0.1% over more than 5000 comparisons carried out in our laboratory in the 2001-2002 season (see [Info-bulletin 3.6](#)). One of the issues discussed has concerned the ability of the instruments to accurately measure fibres of less than 10 µm in diameter. This is further discussed in technical note [D26](#).

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