

# Critical Evaluation of the Cgrain Value as a Tool for Rapid Morphometric Phenotyping of Husked Oat Grains

## Cgrain Image Analysis

The Cgrain can hold and analyse one bulk grain sample at a time up to approximately 500g for oats.

In each instance, the entire sample was tipped into the machine's sample inlet and the oat grains were automatically presented to the image capture area at a steady rate using the integrated vibrating bowl, which automatically adjusts the speed of the vibration to maintain a sampling rate of approximately 5–7 seeds per second.

For each sample, the Cgrain was allowed to operate until all grains had passed over the imaging surface and into the collection drawer below, from which they were recovered before the next sample was analysed.

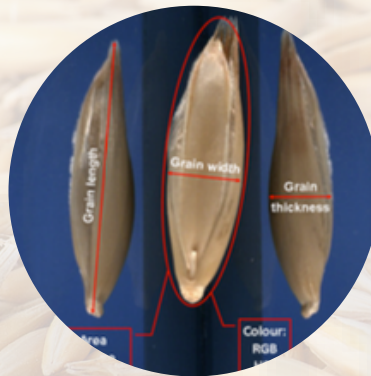
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The Cgrain Value visually inspects samples, effectively identifying foreign grains, damaged grains, ergot, broken grains, and skinned kernels.

## Features and Benefits

- Comprehensive visual analysis
- Autonomous operation
- Consistent accuracy
- Enhanced decision making

Example of an image of an oat grain as captured by the Cgrain Value. The angled mirror allows for almost full visualisation of the grain surface, predictions of 3-D structure and colour can be made from this captured image.



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