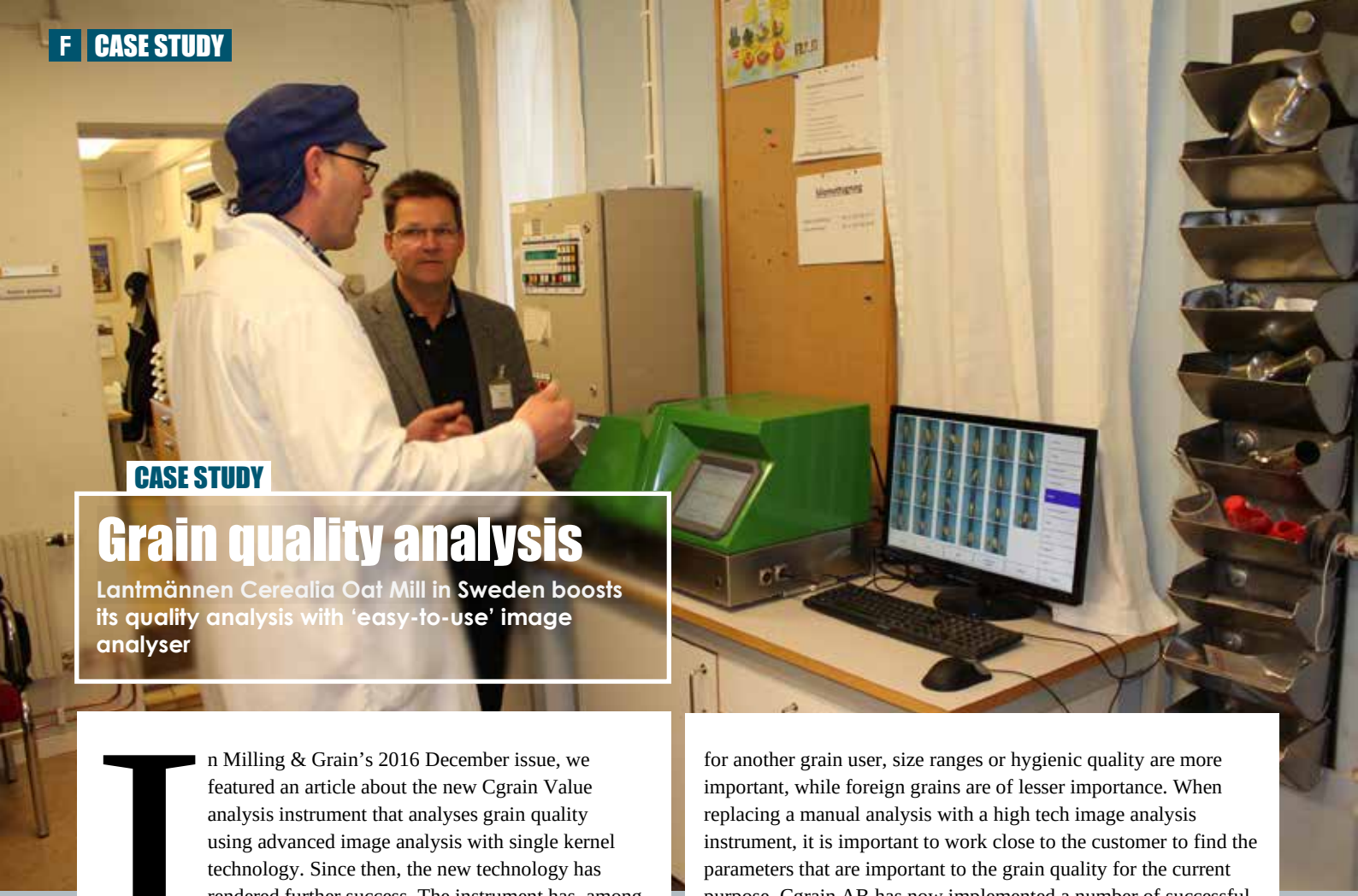


CASE STUDY

Grain quality analysis

Lantmännen Cerealia Oat Mill in Sweden boosts its quality analysis with 'easy-to-use' image analyser

In Milling & Grain's 2016 December issue, we featured an article about the new Cgrain Value analysis instrument that analyses grain quality using advanced image analysis with single kernel technology. Since then, the new technology has rendered further success. The instrument has, among other things, been installed at the Lantmännen Cerealia Oat Mill in Sweden, which handles 45,000 metric tonnes of oats per year and the instrument gives the mill information that has led to savings in several steps in the production process.

Unique patented design enables full surface analysis of every kernel

Cgrain Value is an image analysis instrument that assesses grain quality on the basis of single kernel analysis in most grain. Cgrain Value currently has applications for wheat, rye, triticale, barley, oats and dehulled/naked oats.

Defects that can be analysed are for example foreign cereals, foreign matter, weed seeds, pink fusarium in barley and green (immature) kernels. In addition to the visible defects, the user furthermore receives additional statistics regarding the lot as size measurements and can be used for sieving analysis.

The instrument has a patented design with mirrors that enables almost the entire surface of every kernel to be analysed. This is especially important when looking for defects that might only be visible on part of the kernel and gives the analysis a very high repeatability.

Cgrain Value can replace the manual assessment done today. The manual analysis is highly dependent on trained personnel, is time consuming, subjective and laborious. Cgrain Value provides an objective analysis and increases the reliability of the analysis as well as releasing time from staff and provides a better work environment.

Users choose the analytical parameters according to the application

Depending on the use, different grain consumers value grain quality in different ways. For a certain grain handler, impurities as foreign cereals can be the most important parameter, while for another grain user, size ranges or hygienic quality are more important, while foreign grains are of lesser importance. When replacing a manual analysis with a high tech image analysis instrument, it is important to work close to the customer to find the parameters that are important to the grain quality for the current purpose. Cgrain AB has now implemented a number of successful installations at grain facilities by close cooperation and adaptations to customers' wishes. An example of this is the Lantmännen Cerealia Oat Mill in Sweden.

Operators appreciate easy use

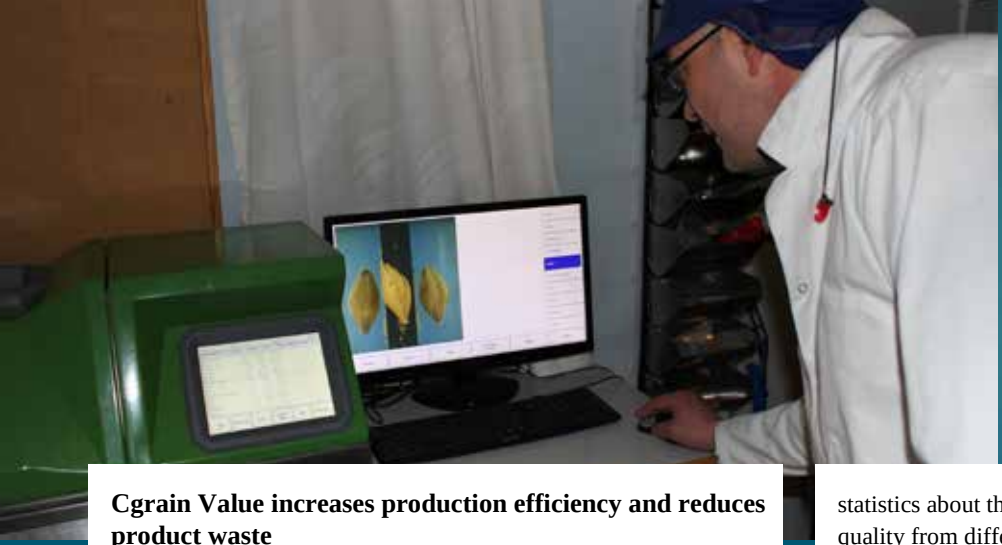
Installation of the instrument at Lantmännen's oat mill in Sweden took place in the fall of 2016. Here the focus has been on the assessment of foreign cereals, as well as sieving analysis. Even peeled oats are determined in oats. Additionally, there are applications for finding oats with hull left in oats after peeling.

The instrument is used today at the grain reception in the oat mill, and operator Robert Söderberg is one of the users who has been involved since the installation of the instrument. He comments how "it was easy to get started and use the instrument because Cgrain Value is easy to use and I felt that it helped me right away. You feel certain that you haven't missed anything and know that each grain lot has had the same assessment. I am very pleased with Cgrain Value and feel that it has improved our quality analysis."

Reference: Oat sample Seed Count: 12226 Weight: 500.00 g

Filtered As	Count	wt%	TKW		
Sieving >2.0		98.66	42.24		
Sieving >2.2		95.07	43.18		
Sieving >2.8		11.33	57.41		
Oats	11999	98.54	41.06		
Naked Oats	23	0.16	35.34		
Foreign	62	0.45	36		
Barley	*58*	*0.43*	*36.73*		
Rye	*3*	*0.02*	*25.15*		
Wheat	*1*	*0.01*	*25.96*		
Triticale	*0*	*0*			
Weed	0	0			
Other	142	0.85	29.86		
	12226	**100**	**40.9**		

View | Print | Stats. | Export | Close



Cgrain Value increases production efficiency and reduces product waste

Slobodan Carapic is the production manager at Cerealia in Järna and is very satisfied with the installation of Cgrain Value, he remarked, "For the first time since I started in the grain industry we know the percentage of dehulled/naked oats in our deliveries of oats. This allows us to take this into account in our process. In our deliveries this year we see that the level of peeled oats has varied between one and 12 percent. Now, at high levels of peeled oats we can alter the sieves during the cleaning to improve the efficiency and get a higher yield. With this information we can take care of the oats and increase the yield in the cleaning section."

They can detect foreign grain in oats with a higher accuracy than manually, which is extremely important to ensure the product quality. With the higher detection of foreign grain with Cgrain Value, product waste can be reduced.

Another benefit with the instrument is that they get very good statistics about their deliveries. This enables monitoring of how quality from different suppliers looks, in order to continuously work on getting better raw materials.

Many uses for new technique

In addition to the installation of Cgrain Value at Lantmännen's Oat Mill in Sweden, the instrument is also used for payment analyses on rye, wheat and oats, as well as in seed breeding for development work. In addition, several instruments will be installed for analysing pink fusarium in malting barley deliveries from farmers in Sweden in the near future. The possibilities are far-reaching with this new technology.

Further development

Cgrain AB has already a large set of applications for almost all grain but is continuously working to develop new applications according to customer needs. Currently further development is done on durum wheat and rapeseed.

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