

Get control of **gluten** contamination in **OATS**

QualitySense

QualitySense presents the **QSorter® Explorer** for the reliable detection of the **gluten contaminants in oats** e.g., wheat, barley and rye.

These foreign grains are present even if the oats are grown and handled according to the "**Gluten Free**" protocol.

The QSorter® is the only technology that can test **each grain in a large sample for gluten contamination** at very high speed and with an accuracy higher than 99%. As a result, you gain higher confidence before packaging. Furthermore, it saves you 90% or more of the costs of the very expensive ELISA or laboratory tests.

Since several years, leading brands of the oat industry such as **Cheerios** and **Quaker Oats** are using the QSorter® technology.

QSorter® Explorer

High-speed **Single-kernel** Solution For Detecting Gluten Contaminants



Single-grain analysis

Analysis of biochemical properties

Analysis of physical properties

20x faster than manual inspection

High accuracy

> 99% repeatability

In the current inspection practices, there are several issues preventing the better performance for the oats industry.

- Time constraints allow inspection of small samples only where sampling errors account for 90% of the error budget.
- Inspectors analyze every kernel for visual defect which takes a lot of time.
- Multiple instruments are used for various parameters which results in high costs, complexity of maintenance and increase of the error budget.

Fast, Accurate and Repeatable Analyses

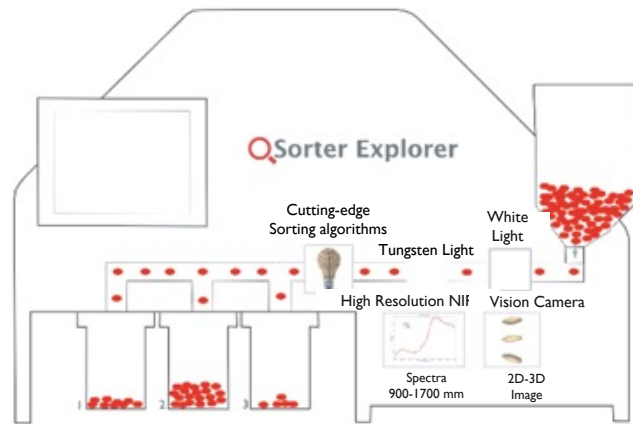
QSorter® Technology combines two sensing technologies - **3D Machine Vision** and **Hyperspectral NIR** - each kernel can be identified with very high accuracy. Differences in the amount of light absorbed by the grains appear between 1450 and 1550 nm due to the unique protein content of each variety (Image 1).

With the QSorter® Explorer, the spectral signature and a 3D image of each grain is captured as it passes the "eye" of the high-speed robot. The two datasets are fed into the predictive analytical algorithms and enable sorting decision, at a speed of more than 30 grains per second.

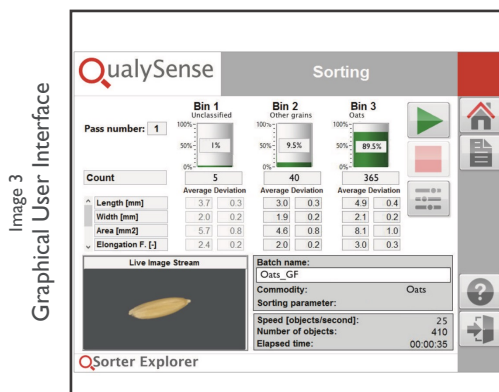
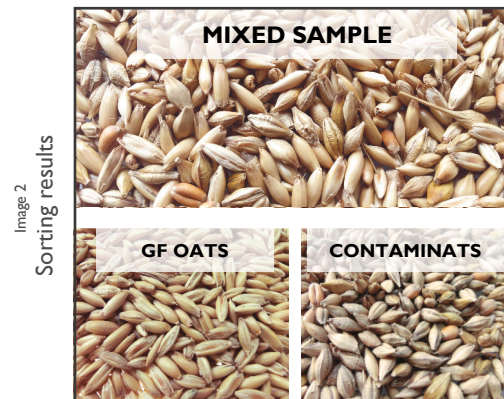
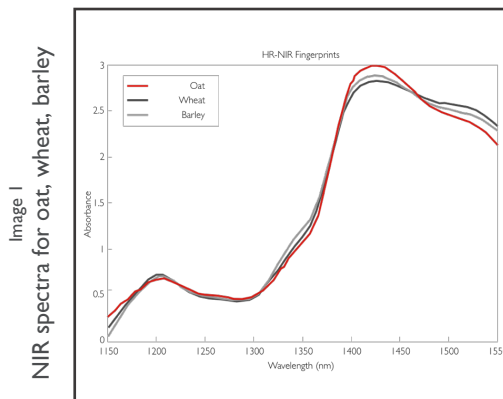
According to given requirements the sample falls into 3 categories (Image 3) - (1) false positive for further visual inspection, (2) mix, (3) gluten-free.

The inspection of these grains can be completed in 1/20 of the time, improving efficiency while still serving as a check for malfunctioning processing equipment.

The repeatability error drops to 2%, 10 times better than the estimated human error.



Results



From oats, wheat, rye to barley our range of gluten free applications are here to help you reduce the tedious workload and to perfect your products across a range of food and beverages industry.