



TOMRA
SORTING SOLUTIONS

FOOD

FRESH MARKET POTATOES & VEGETABLES

English

HIGHER YIELD, CONSISTENT QUALITY

Our sorting machines combine advanced technology and efficiency, offering the best solution in terms of return on investment. Thanks to our tailored solutions your business can grow and gain market share in the highly competitive food industry.

SORTING IS VITAL

Your reputation is on the line and just one mistake can damage it forever. No matter what part of the food industry you're in, sorting is vital. As trusted suppliers for more than forty years, TOMRA knows the challenges that growers,

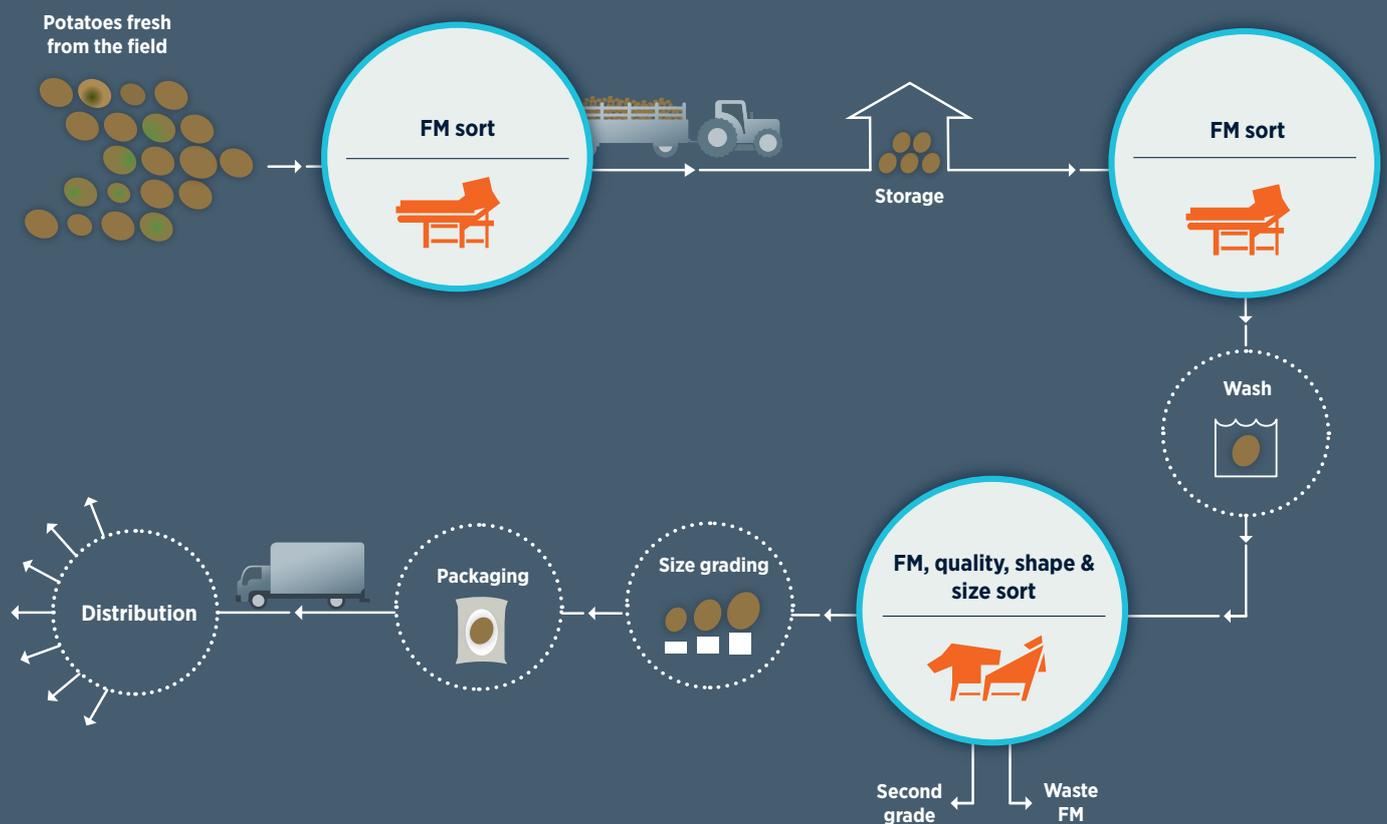
packers, and processors face. And that's why we provide you with the best and most comprehensive sensor-based sorting solutions available in the food industry today.



Applications:
washed and
unwashed potatoes,
unwashed carrots,
Brussels sprouts

SENSOR-BASED SOLUTIONS, FROM FARM TO FORK

This diagram illustrates where our machines can increase your productivity and boost efficiency. The actual implementation of our sorting solutions is always discussed based on your specific needs and requirements.



TOMRA offers a wide variety of machines for every stage of the processing line and every budget.



BENEFITS

QUALITY & YIELD MAXIMISATION

Building a **trustworthy** relationship with your customer, while increasing your company's yield is achieved through the integration of TOMRA's advanced sorting technology. Reliable high capacity sorting results in a more efficient plant equipment usage. Whereas the effective and consistent removal of defects, guarantees the delivery of **safe** and pure food. In addition, the limitation of recalls increases overall customer **satisfaction** and reinforces your corporate image towards the market and competitors.

CONSISTENT PERFORMANCE

Stable and reliable performance is key to keep your factory running and your business **competitive**. TOMRA's technologies offer you technological advantage and **stability** during operation. At the same time our solutions minimize energy usage and significantly **reduce waste**.

LOW OPERATIONAL COSTS

The combination of low maintenance, the sorter's ease of use and its open design which limits **sanitation** issues all lower the operational costs and increase the productivity of your processing line.

TECHNOLOGY

PULSED LEDS

Superior low power high output pulsed LED lighting modules illuminate the product for inspection by the TOMRA high efficiency spectroscopic sensors. Strategically selected RGB and IR frequencies enable detection of defects and the subtlest color differences. The benefits are numerous: calibration-free, stable, long life-time, high resolution, low heat generation.

NIR SPECTROSCOPY

Near-infrared (NIR) spectroscopy allows the examination of produce using light beyond the visible spectrum, into the near-infrared region. The technology detects features of the produce which are impossible to see by humans with visible light. Thanks to TOMRA's NIR technology it is possible to identify certain chemical and molecular differences and changes on the surface of the objects being inspected.

SHAPE RECOGNITION MODULE

Using high definition illumination and high resolution sensors, sophisticated TOMRA object analysis software checks and establishes a consistent measurement for the shape of every product scanned. Based on easy adjustable settings, the sorter removes gross misshapen produce to waste while produce with minor misshape can be separately diverted to a second grade. In combination with the high capacities being processed by the sorter, the shape analysis module's effectiveness outshines the competition thanks to its speed and versatility.



TOMRA's advanced sorting machines inspect billions of individual product pieces per hour, typically recovering 5-10% through higher yields and better utilization. That's equivalent to approximately 25,000 trucks of potatoes per year!

ADVANCED SORTING PARAMETERS

| | Function FPS | Performance SENTINEL II | High performance HALO |
|---|-----------------|----------------------------|--------------------------|
| Technology | IR | Pulsed LED, VIS/ NIR | Pulsed LED, VIS/ NIR |
| Rejection | 2 way | 3 way | 3 way |
|  Detailed size/ geometry | | ●● | ●●● |
|  Detailed shape | | | ●●● |
|  Color | | ●●● | ●●● |
|  Subtle blemish | | ●● | ●●● |
|  Subtle defect | | ●● | ●●● |
|  Damage | | ●● | ●●● |
|  Foreign material | ●● | ●● | ●●● |
|  Stones | ●●● | ●●● | ●●● |
|  Soil | ●●● | ●●● | ●●● |
| Performance data | ● | ●● | ●●● |
| Diagnostics | ● | ●● | ●●● |
| Control (ease) | ●●● | ●●● | ●●● |

Machine brochures available at www.tomra.com/food or on request.

OUR SORTING SOLUTIONS



●●●●● FUNCTIONALITY
 ●●●●● THROUGHPUT
 ●●●●● FLEXIBILITY

FPS

The Field Potato Sorter is specifically designed for the sort of unwashed potatoes. The robust machine is equipped with multi-spectral NIR sensors enabling the detection of soil clods, stones and FM at very high capacities. Labor reduction, reduced storage costs and improved product quality all result in the maximization of yield and productivity for the grower.

The machine is easy to install and can be fitted to your needs. The combination of advanced technology and extreme wear resistant finger ejectors make it a consistent long life accurate sorting solution.



●●●●● FUNCTIONALITY
 ●●●●● THROUGHPUT
 ●●●●● FLEXIBILITY

SENTINEL II

An efficient and meticulous sort of washed potatoes and vegetables is made possible thanks to the Sentinel II. Meeting the needs of the potato industry, the Sentinel offers a solution for seasonal and year round growers and packers. The customized optical configuration and cost-effectiveness of the machine dramatically increases the already very attractive ROI.

Even at high capacities the sorting performance is guaranteed and all foreign material, blemishes and damaged produce are removed from the product stream. The user interface provides the operator with live data, diagnostics and maintenance information. Sanitation is simplified and maintenance costs kept low, thanks to the open design.



●●●●● FUNCTIONALITY
 ●●●●● THROUGHPUT
 ●●●●● FLEXIBILITY

HALO

The Halo provides a quality, shape and size sort of potatoes and carrots. Pulsed VIS/ NIR LED and high resolution sensor technology separates FM, discolorations, blemishes and shape differences from the good produce. With the highest level of detection and processing power the Halo enables packers to tailor the quality of grade I and II produce to their customers needs regardless of the

incoming product quality variation. The reliable, long life and compact sorter is equipped with wear resistant ejectors and full option user interface providing the operator with live data and statistics. Low operational and maintenance costs, in combination with limited labour requirements, make it a perfect sorter for packers looking for an increased throughput and yield.



You are a Resource Revolutionary.

TOMRA Sorting Solutions Food is the leading provider of sensor based sorting, peeling and processing technology for the fresh- and processed food industries.

Turning yield into usage, profits into progress, TOMRA transforms the way the world obtains, uses, and reuses its resources.

If you are interested in a free demonstration with your own product or if you need more information, please contact us directly.



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