

## ROEBER OS 900 repeats outstanding sorting results

Quality driven seed sorting tips the scale when it comes to deciding whether to market a seed lot or to discard it. Especially when faced with critical input material and difficult defects such as fissures, sorting quality becomes essential. Using the appropriate technology can salvage seed lots and thereby save money.

In a comparative machine-to-machine test under the official control of an experienced plant operator (Austria), the PETKUS/ROEBER optical sorter OS 900 once again proved (see also page 2) its superiority in the field of high-quality sorting. This is in direct contrast to questionable findings published elsewhere. The sorting precision and defect evaluation of the OS 900 proved to be considerably higher than that of the competitor. The

competing machine was from a European manufacturer and claimed to be technically equivalent. For both machines, two samples were taken and analysed independently by the labs of the plant operator and ROEBER with both coming to the same findings. Test conditions and results were as follows:

■ **Defects:** The corn sample contained impurities and defects such as black discoloration, fusarium, broken kernels, and tiny fissures.

■ **Capacity:** The OS 900 was explicitly adjusted for high-quality seed sorting. Thus, a capacity decrease was purposely taken into account. The same machine is running seed corn at a reference plant in Germany at a capacity of 17 t/h.

■ **Engineering:** Outstanding results can only be achieved with a high-tech machine if it is installed properly using good engineering practice. A high level of expertise is required to handle the engineering of these types of machines; something that only a limited number of companies can claim. Only after the PETKUS team properly installed the machine in Austria and corrected the existing 3<sup>rd</sup> party installation errors, the OS 900 was able to generate these outstanding results.

## Comparative machine-to-machine testing

Issue	Competitor	ROEBER OS 900
Detection of black discoloration	Yes	Yes
Detection of fissures	Not sufficiently	<b>Considerably superior</b> These fissures can result in a considerable drop in early seed vigour and cold test values.
Good material in the first reject	76%	61% → <b>15% less than competitor</b>
Loss of good material / seed loss	16%	12% → <b>4% less than competitor</b>
Final impurity content of input material after sorting (from initial 12,5%)	9,4%	5,6% → <b>4% less than competitor</b>
Impurity reduction	25%	55%



**OS 900 versus competitor showed:**

OS 900 → **Twice as much impurity recognition and reduction!**

OS 900 → **Superior in detecting tiny fissures!**

OS 900 → **Notably lower proportion of good seeds in the reject!**

OS 900 → **Overall more good seeds for sale!**

*Under the same conditions, the OS 900 recognizes defects and kernel characteristics more precisely, generates lower grain loss and a higher level of purity.*



## Throughput, purity & germination of early flint/dent corn varieties

The major objectives of seed sorting and cleaning are to produce phytosanitary approvable seed and highly vigorous plants in the field. In several tests with seed producers the PETKUS/ROEBER OS 900 optical sorter fulfilled the requirements of high-quality seed sorting with outstanding results.

At a large seed processing site in Germany, seed corn from two different corn varieties was sampled within the daily processing operation. The varieties showed similar defects with different degrees of occurrence. The OS 900 was set up according to the requirements for a high-quality sort. To test capacities the OS 900 was operated with the same input material/variety at both 10 t/h and 17 t/h

throughput as well as with and without re-sort. The samples were analysed in collaboration with an ISTA certified seed testing laboratory. The results were as follows

- Due to precision sorting, seed loss was reduced to a minimum (< 5%).
- Proportion of defects in the “accept” was negligible, even when input material showed high amounts of defects.
- The re-sort mode was highly efficient and reduced seed loss to < 1%.
- High throughputs with simultaneously high quality sorting.

➤ **Seed could be saved from being discarded:**  
 ➔ *With considerable increase of germination capacity and early seed vigor of ~10%.*

Germination Test	Variety A	
Defects	Fusarium, discoloration, broken kernels, fissures	
Defects in input	13,6%	
Defects in accept	3,6%	
Impurity reduction	74%	
Germination capacity	Input:	Accept:
Warm test	87%	95%
Cold test	73%	84%

Capacity Test	Variety B		
	10 t/h (without re-sort)	17 t/h (without re-sort)	17 t/h (with re-sort)
Capacity			
Defects in input	2,5%	2,4%	2,5%
Defects in accept	1,1%	1,4%	1,4%
Seed loss	3,6%	4,9%	0,4%

## Improving germination capacity for preserving seed corn lots

120 tons of partially popped seed corn from a rejected seed corn lot in Serbia were sorted with the ROEBER OS 900. Excellent detection and separation of defective seeds was the only way to preserve the lot worth several hundred thousand Euros. The analysis and certification was performed by an ISTA certified laboratory and the results were as follows:

- Original material only had a germination capacity of 64%.
- Specific settings in the program of the OS 900 removed defects that had a negative impact on germination capacity.
- Germination (green) capacity was increased to 90%.
- Impurity (blue) proportion of input material was reduced from 30% to 5%.

➤ **Seed was officially certified and sold into market.**



Input Corn



Accept Corn



Final Reject Corn

