



OSKO-PLAST

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Report on comparative field tests for sieves with LDW lamella and sieves with classic lamella

1. Introduction and purpose of research

The aim of the research was to verify the suitability of LDW lamellas' sieves in field conditions in comparison to sieves with standard lamellas. The research was carried out at the Institute of Soil Science and Plant Cultivation at the State Research Institute in Puławy, in the Agricultural Experimental Institution in Werbkowice.

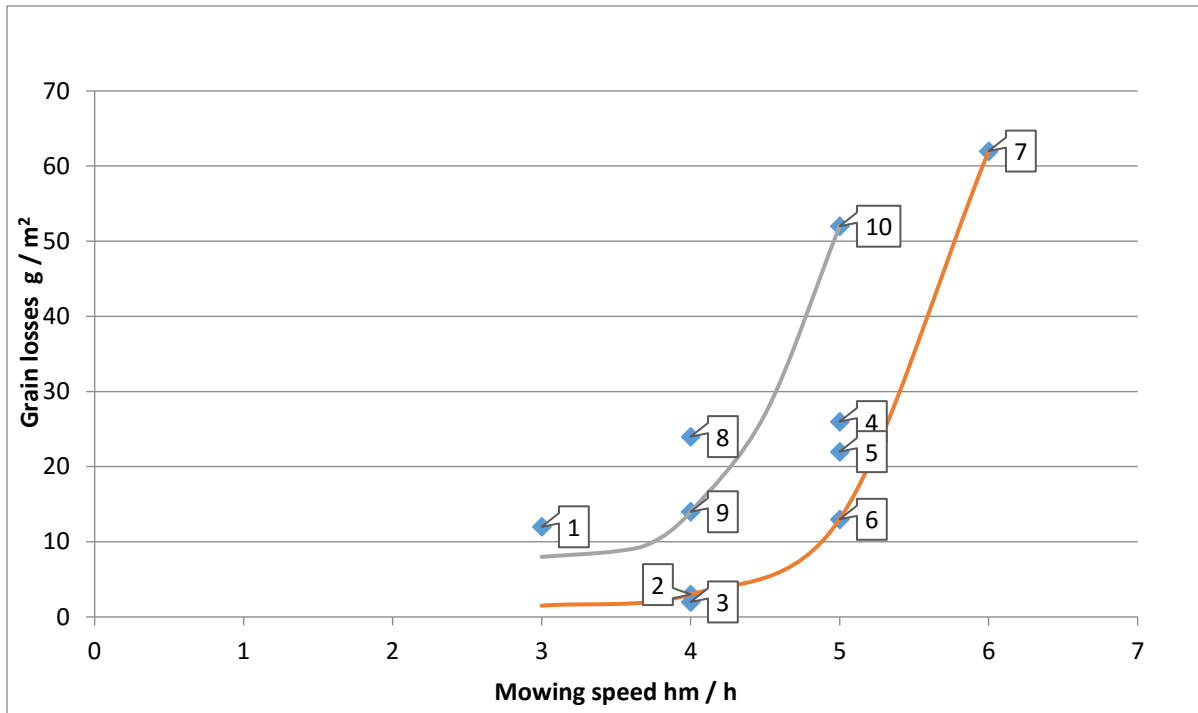
2. Rersearch methodology

The research was carried out on August 4, 2016 on the John DEERE 1170 harvester. The first step was the examination of grain losses on LDW lamella sieves produced by OSKO - PLAST Ostrzyżek, Kostyra sp. j. company. The trials were carried out at different mowing speeds, different sieves opening and different speeds revolving fan. The results of the tests show measurements No. 1 - 7 in the table and in the graph. After the measurements with using LDW lamella sieves, the sieves were changed to classic ones (the upper and extension sieve with the CZ2 lamella and the bottom sieve with the CZ1 lamella). In this system, rehearsals were made again, which represent measurements 8-10 in the table and in the graph.

The examination of grain losses on sieves was carried out in such a way that measuring palettes with a total area of 1 m² were placed under the combine, behind the front axle in the middle of the width of the combine. Such a method of measurement, allowed to measure losses on sieves with the exception of losses from hedra. The contents of the pallet after collecting the straw from the top, was packed in numbered bags. Grain from individual samples has been cleaned mechanically and then pneumatically. The clean samples were weighed on the scale to within 1 gram. The results obtained were presented in tabular form (Table 1) and in the form of a graph (Chart 1).

3. Discussion of test results and visual inspection of sieves

- 1) Examination of the sieve surface allowed to state that their surface after a few hours of mowing is free from contamination and point clogging of cleaning surfaces. This fact is attributed to the effect of a coating of special lacquer, which increases the slip on the surface of the lamellas.
- 2) The analysis of the grain loss graph as a function of the mowing speed allows to state that the sieves with the LDW lamellas have a significant advantage, both as to the mowing efficiency at a given level of losses and to the grain loss at a given mowing speed.



Graph 1. Graph of grain losses as a function of cutting speed

Parametr	Speed [km/h]	Opening of sieves [mm]			Fan rotation [rot./min.]	Losses [g/m ²]	Losses [%]	Comments
		US	ES	BS				
1	3	8	13	8	850	12	Sieves with LDW lamella	
2	4	12	15	8	850	2		
3	4	12	15	8	900	3		
4	5	15	15	8	900	26		
5	5	15	15	8	900	22		
6	5	20	15	8	900	13		
7	6	20	15	8	900	62		
8	4	10	14	5	850	24	Classic sieves	
9	4	12	14	5	850	14		
10	5	12	14	5	900	52		

Table 1. Mowing parameters for individual measurement numbers.

US – Upper sieve

ES – Extension sieve

BS – Bottom sieve