

Statistical data

Comparative analyzes were performed using one-way analysis of variance (ANOVA). In the case of failure to meet the assumption of homogeneity of variance (verified with Levene's test), the Welch F test was used. Tukey's RIR test was used for multiple comparisons. The results were considered statistically significant when the calculated test probability met the inequality $p \leq 0.05$. The calculations were made in the Statistica 10.0 package by Statsoft Polska.

I. Fibre flax trials

Table S1. Post-hoc test for total length of the reference fiber flax varieties and HDH line in vegetation period 2019.

Varieties	Evea	Filea	Novea	HDH	Jan	Sara	Modran	Selena
Evea		1,000	0,001	0,000	1,000	0,067	0,000	0,000
Filea	1,000		0,000	0,000	0,975	0,011	0,000	0,000
Novea	0,001	0,000		0,665	0,012	0,977	0,998	0,826
HDH	0,000	0,000	0,665		0,000	0,086	0,981	1,000
Jan	1,000	0,975	0,012	0,000		0,251	0,001	0,000
Sara	0,067	0,011	0,977	0,086	0,251		0,643	0,170
Modran	0,000	0,000	0,998	0,981	0,001	0,643		0,997
Selena	0,000	0,000	0,826	1,000	0,000	0,170	0,997	

F = 16,59

P = 0,00

Table S2. Post-hoc test for total length of the reference fiber flax varieties and HDH line in vegetation period 2020.

Varieties	Evea	Filea	Novea	HDH	Jan	Sara	Modran	Selena
Evea	--	0,000	0,000	0,000	0,052	0,605	0,000	0,000
Filea	0,000	--	0,743	0,004	0,873	0,170	0,838	0,023
Novea	0,000	0,743	--	0,374	0,058	0,001	1,000	0,707
HDH	0,000	0,004	0,374	--	0,000	0,000	0,275	1,000
Jan	0,052	0,873	0,058	0,000	--	0,933	0,093	0,000
Sara	0,605	0,170	0,001	0,000	0,933	--	0,002	0,000
Modran	0,000	0,838	1,000	0,275	0,093	0,002	--	0,592
Selena	0,000	0,023	0,707	1,000	0,000	0,000	0,592	--

F = 14,52

P = 0,00

Table S3. Post-hoc test for technical length of the reference fiber flax varieties and HDH line in vegetation period 2019.

Varieties	Evea	Filea	Novea	HDH	Jan	Sara	Modran	Selena
Evea		1,000	0,000	0,000	0,399	0,000	0,000	0,000
Filea	1,000		0,000	0,000	0,107	0,000	0,000	0,000
Novea	0,000	0,000		0,002	0,000	0,692	0,999	0,273
HDH	0,000	0,000	0,002		0,000	0,000	0,025	0,843
Jan	0,399	0,107	0,000	0,000		0,146	0,000	0,000
Sara	0,000	0,000	0,692	0,000	0,146		0,271	0,001
Modran	0,000	0,000	0,999	0,025	0,000	0,271		0,692
Selena	0,000	0,000	0,273	0,843	0,000	0,001	0,692	

F = 35,97

P = 0,00

Table S4. Post-hoc test for technical length of the reference fiber flax varieties and HDH line in vegetation period 2020.

Varieties	Evea	Filea	Novea	HDH	Jan	Sara	Modran	Selena
Evea	--	0,007	0,000	0,000	0,000	0,261	0,000	0,000
Filea	0,007	--	0,129	0,000	0,978	0,915	0,512	0,000
Novea	0,000	0,129	--	0,066	0,687	0,002	0,996	0,129
HDH	0,000	0,000	0,066	--	0,000	0,000	0,006	1,000
Jan	0,000	0,978	0,687	0,000	--	0,332	0,978	0,000
Sara	0,261	0,915	0,002	0,000	0,332	--	0,029	0,000
Modran	0,000	0,512	0,996	0,006	0,978	0,029	--	0,015
Selena	0,000	0,000	0,129	1,000	0,000	0,000	0,015	--

F = 16,3

P = 0,00

Table S5. Post-hoc test for panicle length of the reference fiber flax varieties and HDH line in vegetation period 2019.

Varieties	Evea	Filea	Novea	HDH	Jan	Sara	Modran	Selena
Evea		1	0,056	0,000	0,284	0,380	0,150	0,002
Filea	1,000		0,060	0,000	0,299	0,397	0,160	0,002
Novea	0,056	0,060		0,108	0,999	0,996	1,000	0,989
HDH	0,000	0,000	0,108		0,014	0,008	0,037	0,644
Jan	0,284	0,299	0,999	0,014		1	1,000	0,791
Sara	0,380	0,397	0,996	0,008	1		1,000	0,693
Modran	0,150	0,160	1,000	0,037	1,000	1,000		0,922
Selena	0,002	0,002	0,989	0,644	0,791	0,693	0,922	

F = 6,65

P = 0,00

Table S6. Post-hoc test for panicle length of the reference fiber flax varieties and HDH line in vegetation period 2020.

Varieties	Evea	Filea	Novea	HDH	Jan	Sara	Modran	Selena
Evea	--	0,073	0,981	1	0,120	0,997	0,390	0,990
Filea	0,073	--	0,518	0,042	0,000	0,007	0,995	0,004
Novea	0,981	0,518	--	0,948	0,006	0,712	0,936	0,617
HDH	1	0,042	0,948	--	0,188	1	0,278	0,998
Jan	0,120	0,000	0,006	0,188	--	0,485	0,000	0,584
Sara	0,997	0,007	0,712	1	0,485	--	0,083	1
Modran	0,390	0,995	0,936	0,278	0,000	0,083	--	0,056
Selena	0,990	0,004	0,617	0,998	0,584	1	0,056	--

F = 6,34

P = 0,00

Table S7. Post-hoc test for stem diameter of the reference fiber flax varieties and HDH line in vegetation period 2019.

Varieties	Evea	Filea	Novea	HDH	Jan	Sara	Modran	Selena
Evea		1	0,280	1,000	0,724	0,996	0,974	1
Filea	1		0,426	0,999	0,563	1,000	0,995	1
Novea	0,280	0,426		0,115	0,001	0,817	0,931	0,426
HDH	1,000	0,999	0,115		0,919	0,952	0,856	0,999
Jan	0,724	0,563	0,001	0,919		0,202	0,104	0,563
Sara	0,996	1,000	0,817	0,952	0,202		1,000	1,000
Modran	0,974	0,995	0,931	0,856	0,104	1,000		0,995
Selena	1	1	0,426	0,999	0,563	1,000	0,995	

F = 2,78

P = 0,006

Table S8. Post-hoc test for stem diameter of the reference fiber flax varieties and HDH line in vegetation period 2020.

Varieties	Evea	Filea	Novea	HDH	Jan	Sara	Modran	Selena
Evea	--	0,003	0,909	0,000	0,999	1	0,739	0,117
Filea	0,003	--	0,177	0,993	0,026	0,000	0,353	0,957
Novea	0,909	0,177	--	0,018	0,997	0,625	1	0,836
HDH	0,000	0,993	0,018	--	0,001	0,000	0,053	0,545
Jan	0,999	0,026	0,997	0,001	--	0,957	0,968	0,389
Sara	1	0,000	0,625	0,000	0,957	--	0,389	0,026
Modran	0,739	0,353	1	0,053	0,968	0,389	--	0,957
Selena	0,117	0,957	0,836	0,545	0,389	0,026	0,957	--

F = 5,89

P = 0,00

Table S9. Welch test for total yield of the reference fiber flax varieties and HDH line in vegetation period 2019.

Varieties	Mean	N	Standard deviation	Min.	Max.	F Welch	p
Evea	5,67	3	0,81	4,8	6,4	0,47	0,858
Filea	5,37	3	0,40	5,0	5,8		
Novea	5,27	3	0,29	5,1	5,6		
HDH	5,73	3	0,50	5,2	6,2		
Jan	5,90	3	1,18	4,6	6,9		
Sara	5,97	3	0,40	5,6	6,4		
Modran	5,83	3	0,45	5,4	6,3		
Selena	5,97	3	0,78	5,1	6,6		

The collected data do not allow to conclude that the compared varieties differ in average total yield.

Table S10. Post-hoc test for total yield of the reference fiber flax varieties and HDH line in vegetation period 2020.

Varieties	Evea	Filea	Novea	HDH	Jan	Sara	Modran	Selena
Evea	--	0,772	0,999	0,009	1	0,997	1	0,600
Filea	0,772	--	0,974	0,161	0,518	0,984	0,518	1
Novea	0,999	0,974	--	0,028	0,963	1	0,963	0,901
HDH	0,009	0,161	0,028	--	0,004	0,033	0,004	0,259
Jan	1	0,518	0,963	0,004	--	0,946	1	0,356
Sara	0,997	0,984	1	0,033	0,946	--	0,946	0,927
Modran	1	0,518	0,963	0,004	1	0,946	--	0,356
Selena	0,600	1	0,901	0,259	0,356	0,927	0,356	--

F = 5,06

P = 0,003

Table S11. Welch test for straw yield of the reference fiber flax varieties and HDH line in vegetation period 2019.

Varieties	Mean	N	Standard deviation	Min.	Max.	F Welch	p
Evea	4,00	3	0,62	3,30	4,50	0,51	0,836
Filea	3,67	3	0,25	3,40	3,90		
Novea	3,73	3	0,23	3,60	4,00		
HDH	3,80	3	0,20	3,60	4,00		
Jan	3,87	3	0,67	3,10	4,30		
Sara	4,07	3	0,29	3,90	4,40		
Modran	4,10	3	0,26	3,90	4,40		
Selena	4,07	3	0,51	3,50	4,50		

The collected data do not allow to conclude that the compared varieties differ in average straw yield.

Table S12. Welch test for straw yield of the reference fiber flax varieties and HDH line in vegetation period 2020.

Varieties	Mean	N	Standard deviation	Min.	Max.	F Welch	p
Evea	82,60	3	2,60	80,00	85,20	1,70	0,181
Filea	85,17	3	2,95	82,20	88,10		
Novea	83,43	3	3,07	80,00	85,90		
HDH	92,60	3	5,16	86,70	96,30		
Jan	80,27	3	2,14	77,80	81,50		
Sara	85,20	3	8,90	76,30	94,10		
Modran	81,00	3	8,43	74,10	90,40		
Selena	82,97	3	1,27	81,50	83,70		

The collected data do not allow to conclude that the compared varieties differ in average straw yield.

Table S13. Welch test for seed yield of the reference fiber flax varieties and HDH line in vegetation period 2019.

Varieties	Mean	N	Standard deviation	Min.	Max.	F Welch	p
Evea	0,47	3	0,11	0,36	0,58	1,29	0,309
Filea	0,45	3	0,06	0,42	0,52		
Novea	0,40	3	0,05	0,34	0,43		
HDH	0,56	3	0,07	0,48	0,60		
Jan	0,47	3	0,22	0,25	0,68		
Sara	0,48	3	0,16	0,30	0,60		
Modran	0,46	3	0,12	0,32	0,55		
Selena	0,67	3	0,14	0,50	0,76		

The collected data do not allow to conclude that the compared varieties differ in average seed yield.

Table S14. Welch test for seed yield of the reference fiber flax varieties and HDH line in vegetation period 2020.

Varieties	Mean	N	Standard deviation	Min.	Max.	F Welch	p
Evea	4,03	3	0,25	3,80	4,30	1,24	0,337
Filea	6,17	3	0,65	5,50	6,80		
Novea	4,97	3	2,03	3,60	7,30		
HDH	6,37	3	1,31	5,00	7,60		
Jan	5,50	3	2,10	3,40	7,60		
Sara	4,60	3	0,50	4,10	5,10		
Modran	4,37	3	1,45	2,70	5,30		
Selena	6,70	3	2,48	3,90	8,60		

The collected data do not allow to conclude that the compared varieties differ in average seed yield.

II. Linseed trials

Table S15. Post-hoc test for total length of the reference linseed varieties and R26 line in vegetation period 2019.

Varieties	CJ 1016	Altess	Festival	Marquise	Merlin	Jantarol	Bukoz	R26
CJ 1016		1,000	0,000	1,000	0,001	0,000	0,000	0,000
Altess	1,000		0,000	1,000	0,024	0,000	0,000	0,000
Festival	0,000	0,000		0,000	0,000	0,000	1,000	0,998
Marquise	1,000	1,000	0,000		0,013	0,000	0,000	0,000
Merlin	0,001	0,024	0,000	0,013		0,006	0,000	0,000
Jantarol	0,000	0,000	0,000	0,000	0,006		0,010	0,000
Bukoz	0,000	0,000	1,000	0,000	0,000	0,010		0,782
R26	0,000	0,000	0,998	0,000	0,000	0,000	0,782	

F = 51,27

P = 0,00

Table S16. Post-hoc test for total length of the reference linseed varieties and R26 line in vegetation period 2020.

Varieties	CJ 1016	Altess	Festival	Marquise	Merlin	Jantarol	Bukoz	R26
CJ 1016	--	0,069	0,000	0,551	0,891	0,000	0,000	0,000
Altess	0,069	--	0,000	0,972	0,001	0,000	0,000	0,000
Festival	0,000	0,000	--	0,000	0,000	0,000	0,589	0,000
Marquise	0,551	0,972	0,000	--	0,028	0,000	0,000	0,000
Merlin	0,891	0,001	0,000	0,028	--	0,020	0,000	0,021
Jantarol	0,000	0,000	0,000	0,000	0,020	--	0,170	1
Bukoz	0,000	0,000	0,589	0,000	0,000	0,170	--	0,160
R26	0,000	0,000	0,000	0,000	0,021	1	0,160	--

F = 40,83

P = 0,00

Table S17. Post-hoc test for technical length of the reference linseed varieties and R26 line in vegetation period 2019.

Varieties	CJ 1016	Altess	Festival	Marquise	Merlin	Jantarol	Bukoz	R26
CJ 1016		0,935	0,000	1,000	0,000	0,000	0,000	0,000
Altess	0,935		0,000	0,997	0,000	0,000	0,000	0,000
Festival	0,000	0,000		0,000	0,000	0,000	0,044	0,798
Marquise	1,000	0,997	0,000		0,000	0,000	0,000	0,000
Merlin	0,000	0,000	0,000	0,000		0,032	0,000	0,000
Jantarol	0,000	0,000	0,000	0,000	0,032		0,903	0,089
Bukoz	0,000	0,000	0,044	0,000	0,000	0,903		0,991
R26	0,000	0,000	0,798	0,000	0,000	0,089	0,991	

F = 47,40

P = 0,00

Table S18. Post-hoc test for technical length of the reference linseed varieties and R26 line in vegetation period 2020.

Varieties	CJ 1016	Altess	Festival	Marquise	Merlin	Jantarol	Bukoz	R26
CJ 1016	--	0,000	0,000	0,997	0,247	0,001	0,000	0,002
Altess	0,000	--	0,000	0,001	0,000	0,000	0,000	0,000
Festival	0,000	0,000	--	0,000	0,000	0,000	0,000	0,000
Marquise	0,997	0,001	0,000	--	0,040	0,000	0,000	0,000
Merlin	0,247	0,000	0,000	0,040	--	0,647	0,136	0,779
Jantarol	0,001	0,000	0,000	0,000	0,647	--	0,987	1
Bukoz	0,000	0,000	0,000	0,000	0,136	0,987	--	0,956
R26	0,002	0,000	0,000	0,000	0,779	1	0,956	--

F = 37,54

P = 0,00

Table S19. Post-hoc test for panicle length of the reference linseed varieties and R26 line in vegetation period 2019.

Varieties	CJ 1016	Altess	Festival	Marquise	Merlin	Jantarol	Bukoz	R26
CJ 1016		1,000	1,000	1,000	0,910	1,000	0,156	0,002
Altess	1,000		1,000	0,997	1,000	1,000	0,015	0,000
Festival	1,000	1,000		1,000	0,873	1,000	0,195	0,003
Marquise	1,000	0,997	1,000		0,580	1,000	0,477	0,015
Merlin	0,910	1,000	0,873	0,580		0,985	0,000	0,000
Jantarol	1,000	1,000	1,000	1,000	0,985		0,060	0,000
Bukoz	0,156	0,015	0,195	0,477	0,000	0,060		0,996
R26	0,002	0,000	0,003	0,015	0,000	0,000	0,996	

F = 6,78

P = 0,00

Table S20. Post-hoc test for panicle length of the reference linseed varieties and R26 line in vegetation period 2020.

Varieties	CJ 1016	Altess	Festival	Marquise	Merlin	Jantarol	Bukoz	R26
CJ 1016	--	0,202	1	0,484	0,849	0,887	0,001	0,752
Altess	0,202	--	0,425	0,000	0,002	0,945	0,725	0,987
Festival	1	0,425	--	0,243	0,607	0,983	0,005	0,933
Marquise	0,484	0,000	0,243	--	0,999	0,020	0,000	0,008
Merlin	0,849	0,002	0,607	0,999	--	0,108	0,000	0,052
Jantarol	0,887	0,945	0,983	0,020	0,108	--	0,096	1
Bukoz	0,001	0,725	0,005	0,000	0,000	0,096	--	0,183
R26	0,752	0,987	0,933	0,008	0,052	1	0,183	--

F = 8,18

P = 0,00

Table S21. Post-hoc test for bolls number of the reference linseed varieties and R26 line in vegetation period 2019.

Varieties	CJ 1016	Altess	Festival	Marquise	Merlin	Jantarol	Bukoz	R26
CJ 1016		0,000	0,004	0,000	0,006	0,073	0,999	1,000
Altess	0,000		0,901	0,996	0,852	0,342	0,000	0,000
Festival	0,004	0,901		1,000	1,000	1,000	0,162	0,122
Marquise	0,000	0,996	1,000		1,000	0,993	0,033	0,023
Merlin	0,006	0,852	1,000	1,000		1,000	0,210	0,162
Jantarol	0,073	0,342	1,000	0,993	1,000		0,713	0,635
Bukoz	0,999	0,000	0,162	0,033	0,210	0,713		1,000
R26	1,000	0,000	0,122	0,023	0,162	0,635	1,000	

F = 4,58

P = 0,00

Table S22. Post-hoc test for bolls number of the reference linseed varieties and R26 line in vegetation period 2020.

Varieties	CJ 1016	Altess	Festival	Marquise	Merlin	Jantarol	Bukoz	R26
CJ 1016	--	0,993	1	0,710	0,901	0,802	0,784	0,834
Altess	0,993	--	0,999	0,989	1	0,286	0,270	0,998
Festival	1	0,999	--	0,818	0,955	0,690	0,669	0,912
Marquise	0,710	0,989	0,818	--	1	0,032	0,029	1
Merlin	0,901	1	0,955	1	--	0,093	0,086	1
Jantarol	0,802	0,286	0,690	0,032	0,093	--	1	0,061
Bukoz	0,784	0,270	0,669	0,029	0,086	1	--	0,056
R26	0,834	0,998	0,912	1	1	0,061	0,056	--

F = 3,16

P = 0,005

Table S23. Welch test for total yield of the reference linseed varieties and R26 line in vegetation period 2019.

Varieties	Mean	N	Standard deviation	Min.	Max.	F Welch	p
CJ 1016	49,33	3	4,51	45	54	2,60	0,010
Altess	38,00	3	9,85	30	49		
Festival	41,00	3	7,21	33	47		
Marquise	37,67	3	3,21	34	40		
Merlin	33,33	3	2,52	31	36		
Jantarol	36,67	3	5,86	30	41		
Bukoz	48,67	3	7,37	43	57		
R26	43,00	3	3,00	40	46		

The collected data do not allow to conclude that the compared varieties differ in average total yield.

Table S24. Welch test for total yield of the reference linseed varieties and R26 line in vegetation period 2020.

Varieties	Mean	N	Standard deviation	Min.	Max.	F Welch	p
CJ 1016	78,33	3	10,10	67,5	87,5	0,82	0,588
Altess	71,93	3	6,77	65,8	79,2		
Festival	78,87	3	10,73	70	90,8		
Marquise	62,23	3	20,40	41,7	82,5		
Merlin	61,93	3	8,36	54,2	70,8		
Jantarol	67,50	3	13,99	56,7	83,3		
Bukoz	70,00	3	10,42	60	80,8		
R26	66,10	3	14,04	50	75,8		

The collected data do not allow to conclude that the compared varieties differ in average total yield.

Table S25. Welch test for straw yield of the reference linseed varieties and R26 line in vegetation period 2019.

Varieties	Mean	N	Standard deviation	Min.	Max.	F Welch	p
CJ 1016	15,67	3	2,08	14	18	3,46	0,001
Altess	17,67	3	2,52	15	20		
Festival	21,67	3	5,03	17	27		
Marquise	15,33	3	1,53	14	17		
Merlin	16,00	3	1,00	15	17		
Jantarol	16,67	3	2,52	14	19		
Bukoz	21,00	3	3,61	18	25		
R26	20,00	3	2,00	18	22		

The collected data do not allow to conclude that the compared varieties differ in average total yield.

Table S26. Welch test for straw yield of the reference linseed varieties and R26 line in vegetation period 2020.

Varieties	Mean	N	Standard deviation	Min.	Max.	F Welch	p
CJ 1016	40,83	3	8,78	32,50	50,00	1,22	0,348
Altess	35,00	3	3,66	32,50	39,20		
Festival	43,33	3	5,83	39,20	50,00		
Marquise	30,57	3	10,84	19,20	40,80		
Merlin	33,33	3	4,15	29,20	37,50		
Jantarol	36,97	3	6,48	31,70	44,20		
Bukoz	42,23	3	5,71	35,80	46,70		
R26	41,97	3	10,40	31,70	52,50		

The collected data do not allow to conclude that the compared varieties differ in average total yield.

Table S27. Post-hoc test for seed yield of the reference linseed varieties and R26 line in vegetation period 2019.

Varieties	CJ 1016	Altess	Festival	Marquise	Merlin	Jantarol	Bukoz	R26
CJ 1016		0,001	0,001	0,210	0,000	0,018	0,142	0,066
Altess	0,001		1,000	0,775	1,000	1,000	0,874	0,973
Festival	0,001	1,000		0,542	1,000	0,990	0,672	0,869
Marquise	0,210	0,775	0,542		0,286	0,999	1,000	1,000
Merlin	0,000	1,000	1,000	0,286		0,906	0,393	0,620
Jantarol	0,018	1,000	0,990	0,999	0,906		1,000	1,000
Bukoz	0,142	0,874	0,672	1,000	0,393	1,000		1,000
R26	0,066	0,973	0,869	1,000	0,620	1,000	1,000	

F = 7,56

P = 0,001

Table S28. Welch test for seed yield of the reference linseed varieties and R26 line in vegetation period 2020.

Varieties	Mean	N	Standard deviation	Min.	Max.	F Welch	p
CJ 1016	17,17	3	3,20	13,70	20,00	0,57	0,767
Altess	19,27	3	1,65	17,60	20,90		
Festival	19,23	3	2,80	16,80	22,30		
Marquise	15,40	3	5,92	9,80	21,60		
Merlin	15,03	3	2,58	12,90	17,90		
Jantarol	17,77	3	5,40	14,50	24,00		
Bukoz	17,90	3	2,95	16,10	21,30		
R26	17,40	3	0,72	16,60	18,00		

The collected data do not allow to conclude that the compared varieties differ in average total yield.