APPENDIXES

Appendix Table 1. Descriptive statistics of compression parameters of hemp bulk oilseeds sample.

Maximum oil output								
Parameters	N	Mean	Sum	Minimum	Maximum	SD ±	% CV	SE
M_O (g)	3	31.96	95.89	31.78	32.31	0.30	0.94	0.17
O_Y (%)	3	23.76	71.28	23.62	24.02	0.22	0.94	0.13
E_N (J)	3	1349.16	4047.47	1293.45	1392.36	50.63	3.75	29.23
V_E (J/m^3)·10^5	3	59.64	178.94	57.18	61.55	2.24	3.75	1.29
Residual oil output								
Parameters	N	Mean	Sum	Minimum	Maximum	± SD	% CV	SE
M_O (g)	2	2.45	4.89	2.22	2.67	0.32	13.01	0.23
O_Y (%)	2	1.82	3.64	1.65	1.98	0.24	13.01	0.17
E_N (J)	2	852.53	1705.06	717.11	987.95	191.51	22.46	135.42
V_E (J/m^3)·10^5	2	37.69	75.38	31.70	43.68	0.95	33.14	0.67

N: Number of samples; M_O: Mass of oil; O_Y: Oil yield; E_N: Deformation energy and V_E: Volume energy; SD: Standard Deviation; CV: Coefficient of Variation and SE: Standard Error.

Appendix Table 2. Descriptive statistics of compression parameters of hemp bulk oilseeds sample.

Maximum oil output								
Parameters	N	Mean	Sum	Minimum	Maximum	± SD	% CV	SE
F_r (kN)	3	341.92	1025.76	335.72	350.03	7.34	2.15	4.24
D_f (mm)	3	53.25	159.76	52.94	53.78	0.46	0.86	0.26
H_d (kN/mm)	3	6.42	19.26	6.32	6.60	0.15	2.41	0.09
ε_n (-)	3	0.67	2.00	0.66	0.67	0.01	0.86	0.00
σ_s (MPa)	3	120.93	362.79	118.74	123.80	2.60	2.15	1.50
M_E (MPa)	3	181.68	545.04	178.88	186.72	4.38	2.41	2.53
Residual oil output								
Parameters	N	Mean	Sum	Minimum	Maximum	± SD	% CV	SE
F_r (kN)	2	285.57	571.14	218.65	352.49	94.64	33.14	66.92
D_f (mm)	2	40.64	81.27	37.65	43.62	4.22	10.39	2.99
H_d (kN/mm)	2	7.19	14.37	5.01	9.36	3.08	42.79	2.17
ε_n (-)	2	0.58	1.16	0.54	0.62	0.06	10.39	0.04
σ_s (MPa)	2	101.00	202.00	77.33	124.67	33.47	33.14	23.67
M_E (MPa)	2	177.94	355.89	124.10	231.79	76.14	42.79	53.84

N: Number of samples; F_r: Maximum force; D_f: Deformation; H_d: Hardness; ε_n: Strain; σ_s: Stress and M_E: Modulus of Elasticity; SD: Standard Deviation; CV: Coefficient of Variation and SE: Standard Error.

Appendix Table 3. Descriptive statistics of compression parameters of pumpkin bulk oilseeds sample.

Maximum oil output								
Parameters	N	Mean	Sum	Minimum	Maximum	± SD	% CV	SE
M_O (g)	3	12.74	38.22	12.50	13.01	0.26	2.01	0.15
O_Y (%)	3	12.04	36.13	11.82	12.30	0.24	2.01	0.14
E_N (J)	3	921.35	2764.05	862.02	1008.49	77.10	8.37	44.51
V_E (J/m^3)·10^5	3	40.73	122.19	38.11	44.58	3.41	8.37	1.97
Residual oil output								
Parameters	N	Mean	Sum	Minimum	Maximum	± SD	% CV	SE
M_O (g)	2	13.04	26.08	12.45	13.63	0.83	6.40	0.59
O_Y (%)	2	12.33	24.65	11.77	12.88	0.79	6.40	0.56
E_N (J)	2	1035.17	2070.34	984.05	1086.29	72.30	6.98	51.12
V_E (J/m^3)·10^5	2	45.46	91.53	43.50	48.03	3.19	6.98	2.26

N: Number of samples; M_O: Mass of oil; O_Y: Oil yield; E_N: Deformation energy and V_E: Volume energy; SD: Standard Deviation; CV: Coefficient of Variation and SE: Standard Error.

Appendix Table 4. Descriptive statistics of compression parameters of pumpkin bulk oilseeds sample.

Maximum oil output								
Parameters	N	Mean	Sum	Minimum	Maximum	± SD	% CV	SE
F_r (kN)	3	200.12	600.36	180.16	211.15	17.32	8.65	10.00
D_f (mm)	3	58.71	176.13	55.18	61.63	3.27	5.57	1.89
H_d (kN/mm)	3	3.42	10.25	3.04	3.79	0.38	11.00	0.22
ε_n (-)	3	0.73	2.20	0.69	0.77	0.04	5.57	0.02
σ_s (MPa)	3	70.78	212.33	63.72	74.68	6.13	8.65	3.54
M_E (MPa)	3	96.69	290.06	85.93	107.19	10.63	11.00	6.14
Residual oil output								
Parameters	N	Mean	Sum	Minimum	Maximum	± SD	% CV	SE
F_r (kN)	2	320.15	640.31	300.24	340.07	28.16	8.80	19.91
D_f (mm)	2	46.26	92.52	45.50	47.02	1.07	2.32	0.76
H_d (kN/mm)	2	6.93	13.86	6.39	7.47	0.77	11.11	0.54
ε_n (-)	2	0.66	1.32	0.65	0.67	0.02	2.32	0.01
σ_s (MPa)	2	113.23	226.46	106.19	120.27	9.96	8.80	7.04
M_E (MPa)	2	171.56	343.12	158.09	185.04	19.06	11.11	13.48

N: Number of samples; N: Number of samples; F_r: Maximum force; D_f: Deformation; H_d: Hardness; ε_n: Strain; σ_s: Stress and M_E: Modulus of Elasticity; SD: Standard Deviation; CV: Coefficient of Variation and SE: Standard Error.

Appendix Table 5. Descriptive statistics of compression parameters of sunflower bulk oilseeds sample.

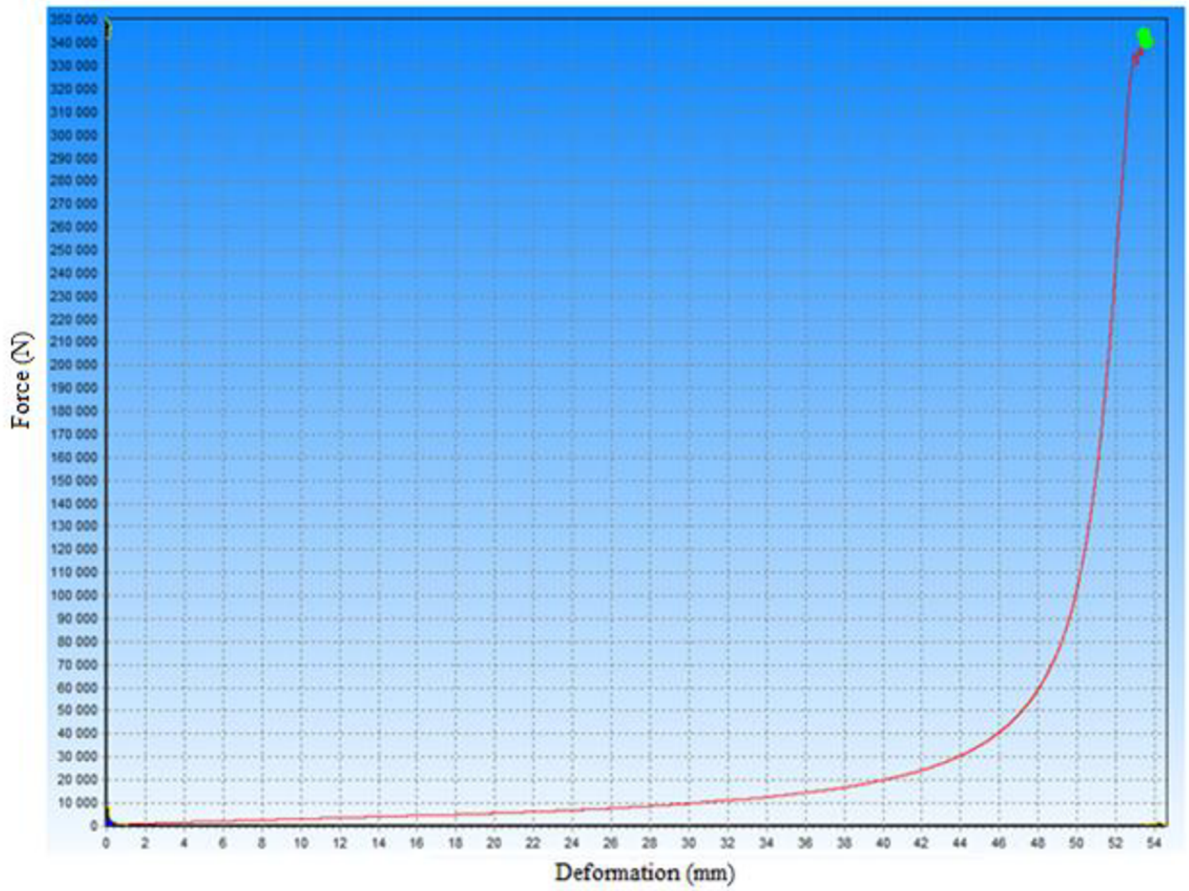
Maximum oil output								
Parameters	N	Mean	Sum	Minimum	Maximum	± SD	% CV	SE
M_O (g)	3	20.84	62.51	20.16	21.53	0.69	3.29	0.40
O_Y (%)	3	18.80	56.41	18.19	19.43	0.62	3.29	0.36
E_N (J)	3	826.14	2478.41	793.51	862.47	34.63	4.19	19.99
V_E (J/m^3)·10^5	3	36.52	109.57	35.08	38.13	1.53	4.19	0.88
Residual oil output								
Parameters	N	Mean	Sum	Minimum	Maximum	± SD	% CV	SE
M_O (g)	2	8.46	16.92	7.84	9.08	0.88	10.36	0.62
O_Y (%)	2	7.63	15.27	7.07	8.19	0.79	10.36	0.56
E_N (J)	2	563.28	1126.57	516.02	610.55	66.84	11.87	47.26
V_E (J/m^3)·10^5	2	24.91	49.81	22.81	26.99	2.95	11.87	2.09

N: Number of samples; M_O: Mass of oil; O_Y: Oil yield; E_N: Deformation energy and V_E: Volume energy; SD: Standard Deviation; CV: Coefficient of Variation and SE: Standard Error.

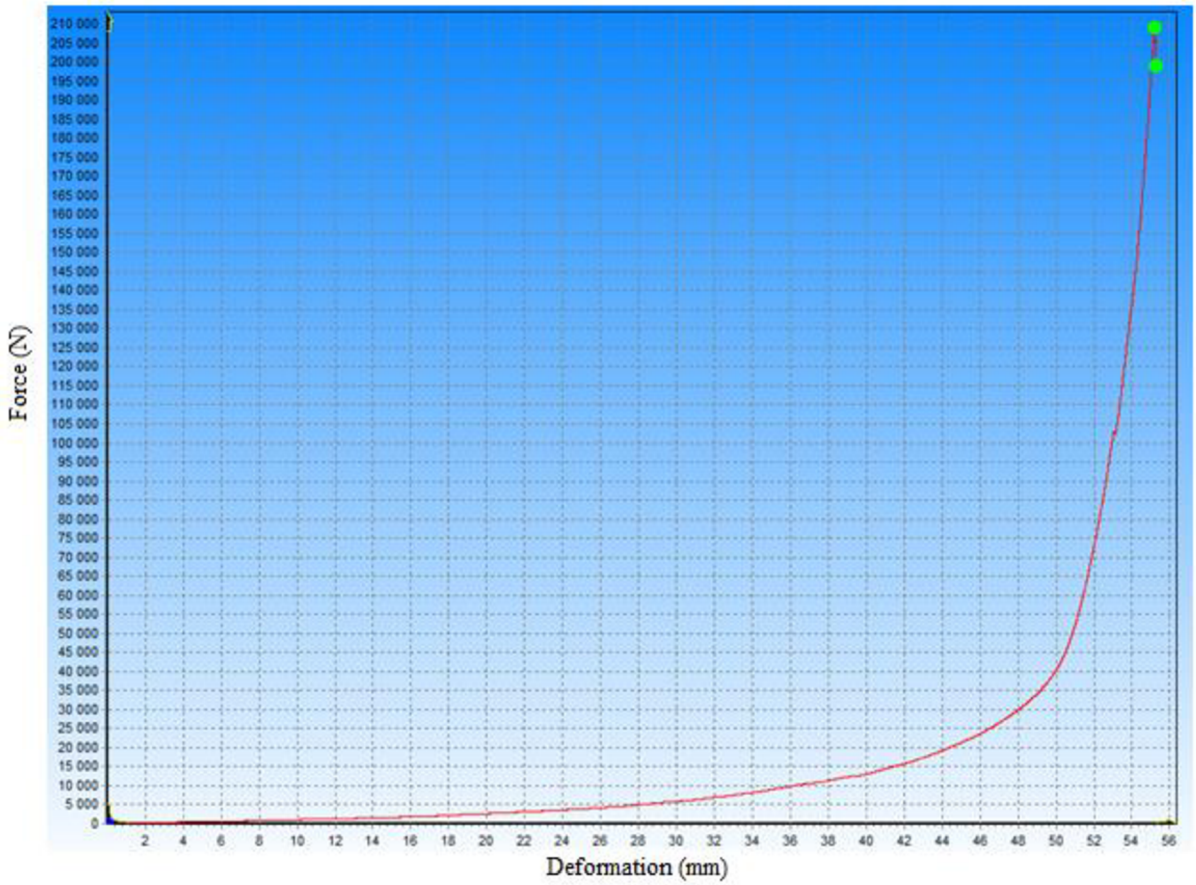
Appendix Table 6. Descriptive statistics of compression parameters of sunflower bulk oilseeds sample.

Maximum oil output								
Parameters	N	Mean	Sum	Minimum	Maximum	± SD	% CV	SE
F_r (kN)	3	188.81	566.42	180.28	198.39	9.10	4.82	5.26
D_f (mm)	3	57.58	172.74	55.51	59.79	2.14	3.72	1.24
H_d (kN/mm)	3	3.28	9.84	3.14	3.45	0.16	4.86	0.92
ε_n (-)	3	0.72	2.16	0.69	0.75	0.03	3.72	0.02
σ_s (MPa)	3	66.78	200.33	63.76	70.17	3.22	4.82	1.86
M_E (MPa)	3	92.82	278.46	88.85	97.73	4.51	4.86	2.61
Residual oil output								
Parameters	N	Mean	Sum	Minimum	Maximum	± SD	% CV	SE
F_r (kN)	2	195.39	390.78	173.93	216.85	30.36	15.54	21.46
D_f (mm)	2	48.01	96.01	47.63	48.38	0.53	1.10	0.38
H_d (kN/mm)	2	4.07	8.13	3.65	4.48	0.59	14.44	4.15
ε_n (-)	2	0.69	1.37	0.68	0.69	0.01	1.10	0.01
σ_s (MPa)	2	69.10	138.21	61.51	76.70	10.74	15.54	7.59
M_E (MPa)	2	100.69	201.37	90.40	110.97	14.54	14.44	10.28

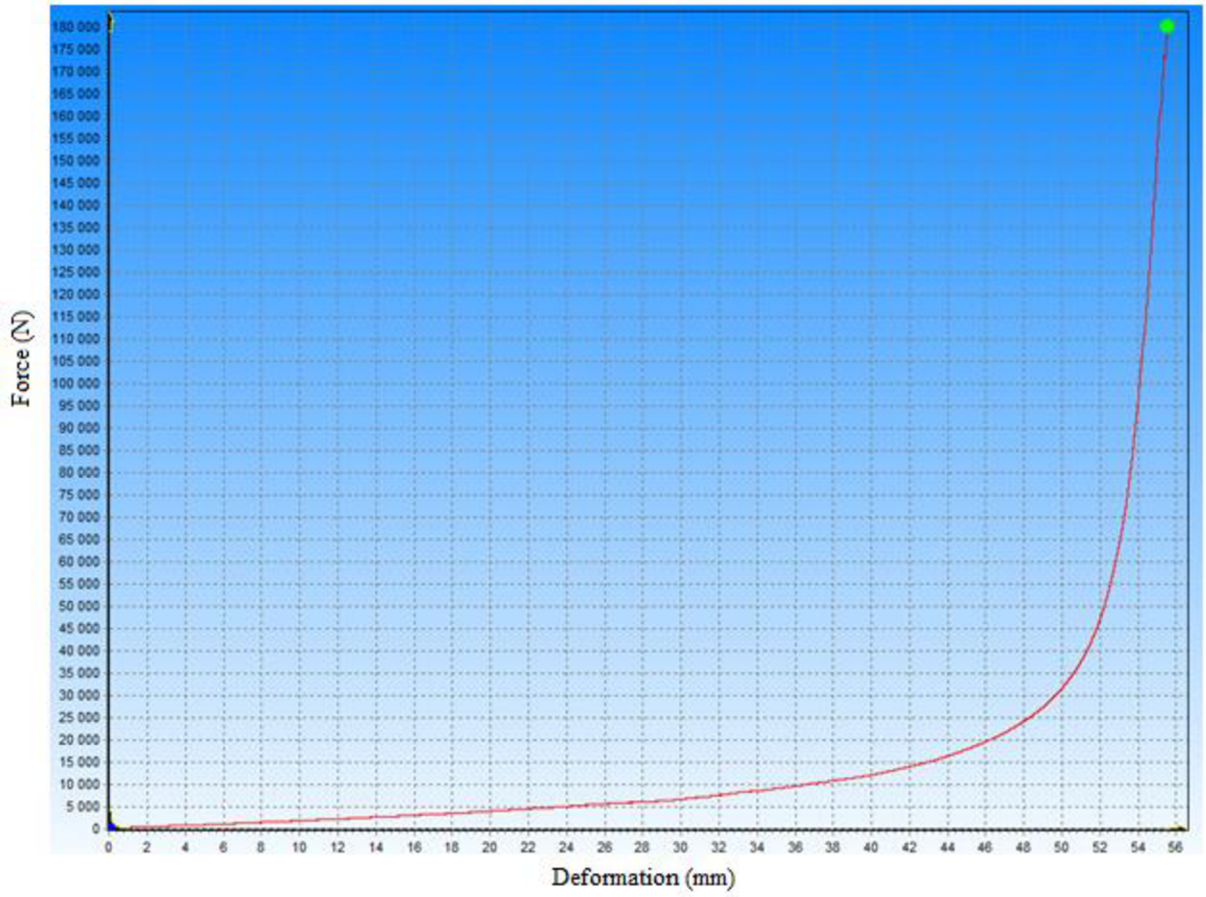
N: Number of samples; N: Number of samples; N: Number of samples; F_r: Maximum force; D_f: Deformation; H_d: Hardness; ε_n: Strain; σ_s: Stress and M_E: Modulus of Elasticity; SD: Standard Deviation; CV: Coefficient of Variation and SE: Standard Error.



Appendix Figure 1. Experimental force-deformation curve of hemp bulk oilseeds sample for the first test similar to the other tests conducted.



Appendix Figure 2. Experimental force-deformation curve of pumpkin bulk oilseeds sample for the first test similar to the other tests conducted.



Appendix Figure 3. Experimental force-deformation curve of sunflower bulk oilseeds sample for the first test similar to the other tests conducted.

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