

Phenotypic divergence for morphological and yield-related traits in black oat (*Avena strigosa*)

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Supplementary Table 1. Expression of quantitative and qualitative vegetative and reproductive descriptors of *Avena strigosa*. Passo Fundo, 2017

Accessions	Growth habit	Position of flag leaf	Frequency of plants with recurved flag leaves	Shape of awn	Length of rachis (cm)	Length of lower glume (mm)	Plant height (cm)	Length of lemma (mm)	Cycle
P1	Semi-erect	Decumbent	Medium	Twisted	22.2 ns	18.4 ns	108 ns	14.7 ns	98 ns
P2	Intermediate	Erect	Medium	Geniculate	21.8	18.6	108	15	98
P3	Intermediate	Erect	Medium	Twisted	23.5	18.8	104	14.9	98
P4	Semi-erect	Erect	Medium	Geniculate	22.9	17.5	111	14.6	98
P5	Intermediate	Decumbent	High	Geniculate	21.8	18.4	106	14.5	100
P6	Intermediate	Decumbent	Medium	Geniculate	22.3	17.9	104	15.4	100
P7	Semi-prostrate	Decumbent	Medium	Geniculate	21.7	17.5	107	15	98
P8	Semi-erect	Decumbent	Medium	Twisted	22.5	17.9	106	14.6	98
P9	Intermediate	Erect	Absent or Very low	Twisted	23.2	18.6	107	14.5	100
P10	Intermediate	Erect	Medium	Geniculate	21.4	17.3	105	15.3	96
P11	Intermediate	Erect	Absent or Very low	Geniculate	22.9	18.7	109	15.5	95
P12	Intermediate	Erect	Medium	Geniculate	22.8	17.9	104	15.3	102
P13	Intermediate	Erect	Medium	Geniculate	22.2	18.5	104	14.8	96
P14	Semi-erect	Decumbent	Medium	Twisted	22	18.4	106	15.2	100
P15	Semi-erect	Decumbent	Medium	Twisted	24.1	19.3	108	15.6	100
P16	Intermediate	Decumbent	Medium	Geniculate	21.7	17.7	115	15.2	98

P17	Intermediate	Erect	Absent or Very low	Geniculate	22.8	18.7	106	14.7	100
P18	Intermediate	Erect	Medium	Geniculate	21.5	19	106	16.1	102
P19	Intermediate	Erect	Medium	Geniculate	22.9	18.3	107	14.5	98
P20	Intermediate	Decumbent	Very High	Geniculate	21.7	17.9	100	14.7	102
P21	Intermediate	Decumbent	Medium	Geniculate	21.5	18.5	109	14.1	96
P22	Semi-erect	Erect	Medium	Geniculate	22.6	18.3	108	15.7	104
P23	Intermediate	Erect	Medium	Geniculate	22.7	18.7	111	15.3	100
P24	Semi-erect	Erect	Medium	Geniculate	20.3	17.9	107	14.7	100
P25	Semi-prostrate	Decumbent	Very High	Geniculate	21.5	18.4	109	14.5	95
P26	Semi-prostrate	Erect	Medium	Twisted	21.8	18.3	112	15.3	102
P27	Intermediate	Erect	Very High	Geniculate	21.2	18.6	108	14.7	98
P28	Semi-erect	Erect	Medium	Twisted	21.6	18	107	14.5	98
P29	Intermediate	Erect	Medium	Geniculate	22.7	18.7	111	14.7	98
P30	Intermediate	Erect	Medium	Geniculate	21	18.7	107	13.8	96
P31	Intermediate	Decumbent	Medium	Geniculate	23.1	18.1	108	14.1	100
P32	Semi-erect	Erect	Absent or Very low	Twisted	22.3	18.6	107	15.4	104
P33	Semi-prostrate	Erect	Absent or Very low	Geniculate	22.9	18.8	109	14.9	100
P34	Intermediate	Erect	Absent or Very low	Twisted	22.2	18.7	104	16.5	102
P35	Semi-erect	Decumbent	Medium	Geniculate	21.4	18.3	106	14.6	100
P36	Semi-erect	Decumbent	Medium	Geniculate	21.4	18.7	108	15.1	100
P37	Intermediate	Decumbent	Very High	Geniculate	21.5	18.4	108	15	96
P38	Intermediate	Erect	Medium	Geniculate	22	18.7	106	14.6	100
P39	Intermediate	Erect	Absent or Very low	Geniculate	21.4	18.2	109	14.8	96
P40	Intermediate	Erect	Medium	Geniculate	22.7	17.6	106	14.7	96
P41	Intermediate	Decumbent	Very High	Twisted	22.2	19.5	109	15.3	98
P42	Intermediate	Erect	Medium	Geniculate	20.6	18.3	104	14.9	100
P43	Intermediate	Erect	Medium	Twisted	21.8	18.9	105	15.7	102
P44	Intermediate	Erect	Medium	Twisted	21.6	19.1	108	15.6	100
P45	Intermediate	Erect	Absent or Very low	Geniculate	22.4	18.1	106	14.9	98
P46	Intermediate	Erect	Medium	Geniculate	22.7	18.1	106	15.1	100

Supplementary Table 2. Characteristics of black oat cultivars characterized. Passo Fundo, 2017

Accession	Plant dry mass (g/plant)	Number of total tillers/plant	Number of reproductive tiller	Culm diameter (mm)	Culm wall thickness (mm)	Width of flag leaf (mm)	Length of flag leaf (cm)	Average length of internodes (cm)	Number of internodes of culm	Length of peduncle (cm)	Grain yield (g/plant)	Tiller dry mass (g/tiller)	Length of culm (cm)
P1	46.7 ns	23 ns	19 ns	4.65 ns	0.68 ns	11.56 ns	19.07 ns	12.1 ns	4 ns	34.8 ns	12.4 ns	7.2 ns	43.82
P2	53.3	23	21	4.29	0.71	11.38	17.97	13.1	4	23.4	16.3	6.9	52.19
P3	23.3	16	13	4.44	0.69	12.88	18.1	12.2	3	30.1	10.8	5.7	41.17
P4	46.7	30	27	4.65	0.82	14.17	20.63	12.3	4	33.4	12.9	4.8	52.66
P5	43.3	23	22	4.28	1.21	12.56	18.4	13.4	4	33	12.6	4.2	57.47
P6	36.7	23	19	4.11	0.73	10.06	16.43	11.6	3	31.2	10	6	31.61
P7	56.7	25	23	4.02	0.82	11.95	16.73	13.2	4	26.6	12	5.8	52.62
P8	50	20	19	4.49	0.73	11.5	18.87	12.7	3	31.2	11.7	5.3	42.40
P9	25	17	13	4.27	0.7	12.36	17.67	12.8	3	30.2	11.6	4.3	43.10
P10	38.3	17	16	4.39	1.15	14.33	24.73	13.4	3	38.5	11.9	5.7	44.80
P11	51.7	18	17	4.2	0.8	13.43	19.93	12.8	4	28.8	9.3	4.7	51.05
P12	48.3	35	23	4.28	0.62	10.86	18.77	11.8	3	38.2	11.2	6.1	35.50
P13	45	28	21	4.56	0.82	12.4	19.77	9.2	4	31.3	12.7	4.2	37.55
P14	46.7	21	20	4.04	0.93	11.76	17.87	11.8	3	29.7	13.5	5.4	38.76
P15	37.5	16	14	4.24	0.78	13.87	18.25	10.8	3	31.5	12.8	6.4	32.44
P16	40	21	18	4.3	0.63	11.44	15.93	11.6	4	27	12.8	5.2	47.45
P17	38.3	17	15	4.4	0.71	12.58	18.57	13.4	3	31.6	13.1	4.7	44.53
P18	55	27	25	4.33	0.63	10.98	15.83	11.3	4	29.2	15	6.4	41.68
P19	46.7	24	22	4.32	0.82	13.06	18.6	11.2	3	36.8	11.8	4.2	37.65
P20	30	20	15	4.08	0.87	11.17	14.9	13.1	3	28.1	13.5	5.6	39.37
P21	40	22	18	4.61	1.02	13.8	18.57	11.9	4	40.5	11.1	3.8	51.55
P22	35	21	17	4.44	0.69	12.71	14.73	12.3	4	27.9	12.5	7.2	45.61
P23	30	17	12	4.85	0.84	13.29	23.37	13.4	4	35.7	13.3	6.6	57.65
P24	28.3	17	14	4.65	1.05	11.94	19.03	13.2	4	35	14.6	6.1	52.90
P25	31.7	18	14	4.17	0.87	10.17	15	9.2	3	29.3	11.3	6.3	30.44
P26	60	27	25	4.39	0.7	12.27	17.2	11.8	4	32.3	11.3	4.8	43.66
P27	45	25	20	4.45	0.65	12.84	19.1	12	3	32.4	11.8	5.4	33.01
P28	36.7	17	15	3.55	0.61	10.23	13.37	10.7	4	22.4	13.6	5.2	39.02
P29	41.7	19	16	4.15	0.69	12.08	20	13.5	4	27.3	14.8	5.5	52.18

P30	28.3	22	19	4.55	0.87	11.91	20	12.7	4	34.7	11.1	4.7	45.62
P31	36.7	19	15	4.59	0.83	12.75	19.07	12.4	5	33.8	14.7	4.4	57.03
P32	40	23	20	4.93	1.04	12.46	17	12.2	4	25	11.9	6.1	44.64
P33	48.3	24	20	4.73	0.9	14.88	19.33	12.6	3	32.8	11.4	8.4	37.92
P34	51.7	22	18	4.45	0.66	12.65	21.6	15.7	4	31.3	13.1	5.6	57.70
P35	30	28	22	4.55	0.87	12.69	18.93	12.7	4	20.7	12.1	7.1	55.26
P36	51.7	25	22	4.48	0.71	10.96	16.53	11.7	3	29.4	14.8	7.8	39.86
P37	48.3	20	18	4.53	0.71	12.22	22.47	12.3	3	37.1	13.5	6.5	39.85
P38	35	16	14	3.96	0.84	11.87	16.5	12.7	4	28.8	14.3	6.4	54.86
P39	33.3	20	16	4.53	0.85	13.09	27.87	11.4	4	36.8	12	5.5	41.38
P40	30	15	13	4.47	0.78	13.47	20.6	11.6	3	27.6	11.8	6	34.91
P41	45	24	21	4.98	0.82	12.99	25.07	13.9	4	39.7	14.4	3.5	50.54
P42	53.3	23	19	5.36	1.58	13.61	25.33	12.7	4	34.7	13.2	6.2	50.62
P43	51.7	22	21	4.45	0.87	12.53	19.3	12	4	33.3	10.5	6.3	43.02
P44	41.7	27	22	4.35	0.8	13.08	17.17	13.2	3	33.5	12.4	6.2	43.75
P45	35	15	12	4.11	0.74	12.64	17.2	11.9	3	26.1	13.8	6.9	38.75
P46	47.5	31	23	2.88	0.54	9.53	11.45	11.1	4	28.9	12.6	6.8	44.57
