

to the article A.Yu. Pronozin, A.A. Paulish, E.A. Zavarzin, A.Yu. Prikhodko, N.M. Prokhoshin, Yu.V. Kruchinina, N.P. Goncharov, E.G. Komyshev, M.A. Genaev "Automatic morphology phenotyping of tetra- and hexaploid wheat spike using computer vision methods"

Characteristics of the distributions of the morphometric parameters of the spikes of hexaploid wheat described in Table 2 of the main text. For each species, the mean (μ_x), median (med_x), standard deviation (SD_x), and variance (σ_x^2) of feature distributions are presented

Species		<i>T. compactum</i>	<i>T. aestivum</i>	<i>T. anti-quorum</i>	<i>T. spelta</i>	<i>T. petro-pavlovskyi</i>	ANK-23	<i>T. yunnana-nense</i>	<i>T. spelta</i> cv. Rother Sommer Kolben	<i>T. macha</i>	<i>T. sphaerococcum</i>	<i>T. vavilovii</i>
Awns area	μ_x	107.42	36.37	12.58	94.28	207.29	17.69	43.74	22.45	42.89	17.55	94.31
	med_x	60.32	22.56	10.48	73.64	148.18	14.56	33.74	10.73	39.48	15.67	103.32
	SD_x	119.5	52.69	8.87	93.7	199.63	11.36	40.72	28.83	28.36	11.15	32.36
	σ_x^2	14 279.68	2775.98	78.63	8779.8	39853.09	129.04	1657.88	831.06	804.04	124.31	1047.00
Circularity index	μ_x	0.22	0.17	0.26	0.12	0.12	0.15	0.17	0.12	0.15	0.28	0.11
	med_x	0.22	0.16	0.26	0.11	0.12	0.15	0.17	0.11	0.15	0.30	0.11
	SD_x	0.08	0.04	0.06	0.03	0.02	0.05	0.06	0.02	0.02	0.07	0.03
	σ_x^2	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Roundness	μ_x	0.25	0.11	0.19	0.07	0.07	0.15	0.1	0.06	0.07	0.22	0.11
	med_x	0.23	0.11	0.19	0.06	0.07	0.14	0.09	0.06	0.07	0.22	0.10
	SD_x	0.08	0.03	0.05	0.02	0.02	0.05	0.05	0.01	0.01	0.04	0.04
	σ_x^2	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Perimeter	μ_x	174.85	218.01	136.7	250.71	323.15	186.61	223.7	236.72	200.08	124.69	263.41
	med_x	165.84	215.16	133.07	251.74	317.61	178.83	227.61	227.53	199.21	112.31	256.04
	SD_x	46.33	45.37	36.81	54.27	67.01	43.61	55.11	40.43	33.50	44.70	36.24
	σ_x^2	2146.78	2058.76	1354.86	2945.31	4490.60	1902.14	3037.25	1634.71	1122.04	1998.35	1313.56
Rachis length	μ_x	51.49	76.19	45.01	90.7	113.80	50.91	84.3	81.66	78.70	33.93	90.93
	med_x	50.43	75.82	44.21	91.42	114.07	51.18	86.02	80.47	81.55	32.30	89.26
	SD_x	10.27	13.24	10.29	18.32	21.28	11.4	24.38	11.03	14.21	12.64	9.25
	σ_x^2	105.39	175.29	105.89	335.78	452.96	129.92	594.17	121.68	201.97	159.74	85.64
x_{u2}	μ_x	33.32	54.97	32.54	71.25	83.97	36.08	63.94	63.70	59.27	24.92	61.83
	med_x	33.31	53.78	32.21	70.98	84.96	33.11	65.71	62.60	61.64	23.20	64.99
	SD_x	10.79	13.45	8.55	17.91	22.15	11.33	21.95	15.91	15.08	13.32	12.17
	σ_x^2	116.5	180.95	73.14	320.84	490.79	128.48	481.84	253.21	227.26	177.47	148.13
x_{b2}	μ_x	33.18	55.07	32.49	71.09	84.52	36.1	64.77	66.36	60.04	24.64	55.61
	med_x	33.21	54.47	32.19	72.53	84.97	36.66	66	66.34	57.07	23.71	62.68
	SD_x	10.7	13.98	8.5	18.98	22.41	10.75	22.02	15.08	13.29	10.69	24.20
	σ_x^2	114.42	195.4	72.22	227.33	502.34	115.61	484.76	227.33	176.57	114.36	585.87
y_{u2}	μ_x	5.73	3.42	2.81	2.38	4.02	3.24	3.5	2.38	2.35	2.47	3.62
	med_x	5.49	3.38	2.79	2.3	3.20	3.12	3.19	2.30	2.51	2.22	3.65
	SD_x	3	1.15	0.88	0.8	6.50	1.27	4.31	0.80	0.73	0.94	0.94
	σ_x^2	9.01	1.31	0.78	0.63	42.22	1.62	18.56	0.63	0.53	0.88	0.89
y_{bm}	μ_x	0.29	0.21	0.21	0.15	0.21	0.2	0.23	0.15	0.17	0.21	0.14
	med_x	0.28	0.2	0.21	0.16	0.21	0.2	0.23	0.16	0.18	0.22	0.13
	SD_x	0.08	0.06	0.05	0.04	0.06	0.06	0.06	0.04	0.05	0.06	0.03
	σ_x^2	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Supplementary material 2

Characteristics of the distributions of the morphometric parameters of the spikes of hexaploid wheat described in Table 2 of the main text. For each species, the mean (μ_x), median (med_x), standard deviation (SD_x), and variance (σ_x^2) of feature distributions are presented

Species		<i>T. aethiopicum</i>	<i>T. dicoccoides</i>	<i>T. dicoccum</i>	<i>T. durum</i>	<i>T. militinae</i>	<i>T. polonicum</i>	<i>T. timopheevii</i>	<i>T. turgidum</i>
Awns area	μ_x	220.72	84.59	120.71	163.25	24.09	52.99	71.63	36.41
	med_x	128.03	55.00	37.85	125.59	15.70	32.49	55.74	21.52
	SD_x	245.34	81.12	274.18	148.48	25.36	70.39	60.49	36.91
	σ_x^2	60 189.76	6580.18	75 172.14	22 045.50	643.11	4955.37	3659.09	1362.58
Circularity index	μ_x	0.17	0.19	0.18	0.18	0.21	0.19	0.22	0.20
	med_x	0.16	0.20	0.14	0.18	0.20	0.20	0.22	0.19
	SD_x	0.05	0.03	0.13	0.06	0.10	0.05	0.06	0.05
	σ_x^2	0.00	0.00	0.02	0.00	0.01	0.00	0.00	0.00
Roundness	μ_x	0.15	0.10	0.26	0.20	0.31	0.18	0.19	0.16
	med_x	0.14	0.11	0.22	0.19	0.30	0.16	0.20	0.16
	SD_x	0.06	0.02	0.16	0.07	0.15	0.08	0.07	0.04
	σ_x^2	0.00	0.00	0.02	0.00	0.02	0.01	0.01	0.00
Perimeter	μ_x	196.96	185.16	97.73	183.09	114.75	244.67	139.85	179.60
	med_x	196.86	180.26	83.55	175.99	110.74	231.35	134.34	181.97
	SD_x	54.67	35.47	63.11	47.36	34.78	64.69	27.70	35.26
	σ_x^2	2988.61	1258.39	3983.33	2243.18	1209.49	4184.79	767.17	1243.48
Rachis length	μ_x	63.21	69.90	26.31	55.70	31.44	80.38	47.46	63.20
	med_x	63.77	67.71	20.57	56.33	30.61	82.08	46.67	65.95
	SD_x	17.55	11.09	22.29	12.86	7.66	12.55	8.51	11.82
	σ_x^2	307.91	123.09	496.80	165.34	58.65	157.52	72.50	139.78
x_{u2}	μ_x	40.66	50.44	17.60	33.50	19.11	42.75	30.10	34.30
	med_x	40.16	50.74	12.65	33.91	19.20	42.06	30.67	34.84
	SD_x	14.16	9.21	17.28	11.28	5.94	12.40	7.57	9.83
	σ_x^2	200.63	84.82	298.68	127.16	35.24	153.86	57.30	96.55
x_{b2}	μ_x	40.65	49.03	18.83	33.81	19.44	42.00	30.31	29.17
	med_x	39.55	48.65	12.93	34.14	19.73	42.50	30.33	31.66
	SD_x	13.66	10.33	18.64	10.88	6.47	11.64	7.73	9.91
	σ_x^2	186.47	106.71	347.34	118.41	41.86	135.41	59.74	98.23
y_{u2}	μ_x	3.87	3.49	2.20	5.05	3.96	5.56	3.74	3.54
	med_x	3.46	3.35	2.47	4.77	3.99	5.14	3.62	3.13
	SD_x	3.89	0.84	1.18	4.42	1.71	2.55	1.35	1.99
	σ_x^2	15.16	0.70	1.40	19.56	2.91	6.50	1.82	3.96
y_{bm}	μ_x	0.23	0.20	0.12	0.27	0.24	0.34	0.23	0.23
	med_x	0.23	0.21	0.13	0.26	0.22	0.31	0.20	0.22
	SD_x	0.06	0.04	0.05	0.13	0.09	0.13	0.07	0.06
	σ_x^2	0.00	0.00	0.00	0.02	0.01	0.02	0.00	0.00

Supplementary material 3. Herbarium specimen of the *Triticum aestivum* ssp. *petropavlovskyi*.
The VIR herbarium (holotype WIR).



Supplementary material 4. Herbarium specimen of the *Triticum aestivum* ssp. *petropavlovskyi*.
The VIR herbarium (paratype WIR).

