

Table S. Variability of traits in a set of 764 oat accessions grouped by country of origin, Tambov Prov., Russia, 2001-2019.

Country of origin	Number of accessions	Grain yield to the reference (%)			1000 grain weight (g)			Germination-heading (days)			Germination-harvesting (days)			Plant height (cm)			Lodging resistance (points)			Leaf blotch (points)		
		Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max
ARGENTINA	1	62.7	62.7	62.7	32.3	32.3	32.3	43.3	43.3	43.3	86.0	86.0	86.0	88.3	88.3	88.3	9.0	9.0	9.0	8.3	8.3	8.3
AUSTRALIA	24	69.5	35.0	135.7	36.3	28.3	43.0	44.3	38.0	50.3	82.4	70.0	95.3	77.4	41.7	111.0	8.5	4.3	9.0	7.1	4.3	9.0
AUSTRIA	2	89.2	78.0	100.3	30.0	27.0	33.0	47.8	41.7	54.0	81.3	81.0	81.7	97.8	86.7	109.0	9.0	9.0	9.0	7.3	7.0	7.7
AZERBAIJAN	1	99.3	99.3	99.3	40.0	40.0	40.0	44.3	44.3	44.3	73.7	73.7	73.7	71.7	71.7	71.7	9.0	9.0	9.0	7.7	7.7	7.7
BELARUS	13	90.7	54.3	128.3	32.1	25.7	38.3	45.2	40.3	49.7	79.2	73.3	84.0	90.7	76.7	111.7	8.9	8.3	9.0	7.8	5.7	9.0
BELGIUM	1	42.0	42.0	42.0	16.7	16.7	16.7	47.0	47.0	47.0	87.0	87.0	87.0	113.3	113.3	113.3	7.7	7.7	7.7	7.0	7.0	7.0
BOLIVIA	2	74.7	71.0	78.3	36.3	35.0	37.7	42.0	40.3	43.7	88.2	87.7	88.7	99.3	96.7	102.0	8.7	8.3	9.0	7.3	7.0	7.7
BRAZIL	34	67.2	39.0	103.3	35.9	21.0	48.3	43.1	38.7	52.7	77.2	71.7	87.0	92.2	58.3	121.7	8.4	4.3	9.0	7.6	5.0	9.0
BULGARIA	5	33.7	26.7	48.3	28.7	24.3	34.3	60.9	55.3	66.3	92.5	87.7	98.0	73.0	70.0	75.0	9.0	9.0	9.0	8.7	8.3	9.0
CANADA	35	76.2	37.0	130.0	34.9	12.7	45.0	44.5	33.7	56.3	85.3	71.0	92.0	94.1	67.3	119.3	8.5	3.7	9.0	7.3	5.0	9.0
CHECH	17	98.3	61.7	119.0	32.6	24.3	38.7	43.5	40.0	51.3	83.5	78.3	87.3	87.0	75.0	101.7	9.0	9.0	9.0	7.8	5.7	9.0
CHILE	3	85.4	68.3	116.7	36.4	31.3	39.0	45.6	44.3	46.7	86.1	83.3	87.7	110.4	106.3	115.0	8.6	8.3	9.0	7.9	7.0	9.0
CHINA	26	75.2	41.7	137.7	31.5	20.7	43.3	46.6	36.7	56.0	79.9	72.3	85.3	102.1	70.0	150.0	8.4	5.0	9.0	7.5	5.7	9.0
COLUMBIA	1	42.0	42.0	42.0	28.7	28.7	28.7	35.7	35.7	35.7	72.7	72.7	72.7	90.0	90.0	90.0	9.0	9.0	9.0	6.3	6.3	6.3
DENMARK	3	92.1	78.0	99.7	31.7	27.7	36.7	49.8	47.3	51.0	84.8	83.3	85.7	110.6	108.3	115.0	6.3	5.0	7.7	7.0	7.0	7.0
ECUADOR	1	85.3	85.3	85.3	31.0	31.0	31.0	52.3	52.3	52.3	84.7	84.7	84.7	105.0	105.0	105.0	9.0	9.0	9.0	8.3	8.3	8.3
ESTONIA	14	100.5	81.7	125.7	36.6	30.7	41.7	44.8	42.7	47.0	85.9	83.3	88.3	85.4	77.7	100.0	9.0	9.0	9.0	7.6	6.3	9.0
ETHIOPIA	7	48.0	26.7	73.0	24.4	16.0	35.0	46.4	37.7	53.0	81.1	70.7	89.0	86.0	72.3	100.0	6.2	3.7	9.0	7.2	5.7	8.3
FINLAND	20	90.7	57.3	111.0	32.2	26.0	41.0	47.3	43.7	51.3	82.9	78.7	87.0	101.5	88.3	116.0	8.6	7.0	9.0	7.5	6.3	8.3
FRANCE	10	74.0	26.0	117.7	26.8	9.3	47.0	47.8	42.7	53.7	81.4	76.0	86.0	94.1	83.3	123.3	7.0	3.0	9.0	7.5	6.3	9.0
GERMANY	45	96.1	45.0	125.3	34.8	16.7	43.7	45.9	38.7	53.0	81.2	75.7	88.3	93.4	68.3	118.3	8.8	5.7	9.0	7.3	5.7	9.0
GREAT BRITAIN	17	71.4	20.0	103.0	29.4	8.0	38.3	48.5	41.7	55.7	82.1	71.0	90.7	94.0	66.7	121.3	7.4	3.0	9.0	7.4	6.3	9.0
GREECE	2	58.8	47.0	70.7	39.7	37.7	41.7	46.0	44.0	48.0	83.0	82.3	83.7	98.7	96.0	101.3	8.7	8.3	9.0	7.7	7.0	8.3
HUNGARY	4	102.4	93.0	112.7	31.3	29.0	34.7	46.6	44.7	49.0	81.2	74.7	85.3	100.8	93.3	105.0	8.2	7.0	9.0	7.7	7.0	9.0
INDIA	1	40.7	40.7	40.7	29.3	29.3	29.3	52.7	52.7	52.7	77.7	77.7	77.7	87.7	87.7	87.7	9.0	9.0	9.0	7.0	7.0	7.0
ITALY	1	94.7	94.7	94.7	30.7	30.7	30.7	40.0	40.0	40.0	68.7	68.7	68.7	81.7	81.7	81.7	8.3	8.3	8.3	7.7	7.7	7.7
JAPAN	30	77.5	23.0	117.7	29.5	19.0	45.7	46.5	39.3	54.0	85.6	82.0	91.0	111.5	66.7	130.0	8.6	6.3	9.0	7.0	4.3	9.0

KAZAKHSTAN	6	97.4	83.3	107.3	36.3	33.0	40.3	45.8	40.3	49.7	82.2	79.7	86.3	101.7	90.0	121.7	8.8	7.7	9.0	8.0	7.7	8.3
KENIA	2	71.3	67.0	75.7	38.8	36.0	41.7	47.3	46.7	48.0	88.8	87.7	90.0	95.3	94.0	96.7	6.3	5.7	7.0	7.0	6.3	7.7
LATVIA	3	90.4	69.0	104.7	32.7	31.7	34.7	52.3	46.7	56.3	84.2	79.3	90.0	100.7	95.0	106.0	8.6	8.3	9.0	7.0	4.3	8.3
LITHUANIA	1	49.7	49.7	49.7	25.7	25.7	25.7	47.3	47.3	47.3	85.7	85.7	85.7	95.0	95.0	95.0	7.7	7.7	7.7	9.0	9.0	9.0
MEXICO	6	63.3	49.0	72.0	34.6	29.7	45.0	37.1	36.7	38.0	82.0	68.3	86.3	88.6	85.0	93.3	9.0	9.0	9.0	7.0	5.0	8.3
MOLDOVA	1	86.7	86.7	86.7	31.0	31.0	31.0	51.0	51.0	51.0	78.7	78.7	78.7	112.3	112.3	112.3	7.7	7.7	7.7	7.7	7.7	7.7
MONGOLIA	2	61.5	61.0	62.0	25.0	24.0	26.0	46.2	41.0	51.3	78.3	78.0	78.7	95.2	86.7	103.7	8.0	7.0	9.0	7.7	7.0	8.3
MOROCCO	1	47.0	47.0	47.0	45.3	45.3	45.3	51.7	51.7	51.7	82.0	82.0	82.0	105.0	105.0	105.0	8.3	8.3	8.3	8.3	8.3	8.3
NETHERLANDS	2	31.2	19.3	43.0	15.8	7.7	24.0	42.0	39.3	44.7	88.3	86.0	90.7	98.3	90.0	106.7	5.0	3.0	7.0	7.3	7.0	7.7
NORWAY	23	96.7	76.3	115.3	33.3	29.0	38.7	42.3	39.0	49.0	79.6	77.0	86.0	87.1	78.3	110.3	8.9	7.7	9.0	6.8	5.0	9.0
PERU	2	86.2	51.3	121.0	25.8	22.3	29.3	46.8	40.3	53.3	83.3	80.0	86.7	94.3	86.7	102.0	9.0	9.0	9.0	8.3	8.3	8.3
POLAND	21	91.1	37.3	121.7	30.4	14.0	38.3	45.9	40.3	55.0	81.4	75.7	86.7	95.3	75.3	110.3	8.3	5.7	9.0	7.7	5.7	9.0
PORTUGAL	6	70.3	60.7	79.3	30.8	17.3	41.0	45.9	39.3	54.3	81.3	75.3	89.0	97.9	83.3	115.0	7.1	4.3	9.0	7.9	6.3	9.0
ROMANIA	8	91.2	49.3	109.3	30.9	18.3	38.5	43.9	40.3	50.0	87.8	85.3	89.7	105.8	86.7	123.3	7.0	5.0	9.0	7.8	7.0	9.0
RUSSIA	1	139.7	139.7	139.7	36.7	36.7	36.7	48.3	48.3	48.3	83.3	83.3	83.3	98.3	98.3	98.3	5.0	5.0	5.0	7.7	7.7	7.7
RUSSIA, ADYGEYA	3	73.7	45.0	121.0	32.3	29.7	34.0	43.7	42.3	45.3	92.3	86.7	95.3	110.6	103.3	115.0	8.3	7.0	9.0	7.7	7.7	7.7
RUSSIA, ALTAY	8	98.9	79.7	114.3	40.7	32.3	44.0	48.1	42.3	51.3	82.9	81.0	89.7	106.2	95.0	121.7	8.7	7.7	9.0	7.8	7.0	9.0
RUSSIA, BURYATIA	2	97.0	93.0	101.0	32.2	30.0	34.3	44.7	43.7	45.7	79.0	79.0	79.0	106.7	100.0	113.3	9.0	9.0	9.0	7.3	7.0	7.7
RUSSIA, IRKUTSK	1	96.0	96.0	96.0	39.7	39.7	39.7	51.3	51.3	51.3	81.7	81.7	81.7	94.7	94.7	94.7	9.0	9.0	9.0	7.0	7.0	7.0
RUSSIA, KEMEROVO	8	74.2	47.0	127.0	29.9	23.0	37.7	48.3	43.0	53.0	80.2	75.0	88.3	94.7	83.3	105.0	9.0	9.0	9.0	7.5	6.3	9.0
RUSSIA, KHABAROVSK	2	103.3	87.7	119.0	32.8	31.3	34.3	44.8	42.7	47.0	80.7	79.3	82.0	91.3	82.3	100.3	9.0	9.0	9.0	8.7	8.3	9.0
RUSSIA, KIROV	13	102.8	59.0	153.3	33.6	26.7	41.0	45.6	40.7	52.0	79.5	70.0	88.7	95.1	73.3	110.0	9.0	9.0	9.0	7.4	6.3	9.0
RUSSIA, KRASNODAR	2	71.3	47.0	95.7	29.3	28.7	30.0	49.2	46.7	51.7	88.7	79.0	98.3	103.7	100.0	107.3	6.0	3.0	9.0	8.3	7.7	9.0
RUSSIA, KRASNOYARSK	8	84.2	54.3	103.0	31.3	26.3	38.3	48.5	46.3	50.3	84.9	78.7	91.0	101.0	89.3	113.7	8.9	8.3	9.0	7.8	7.0	9.0
RUSSIA, KURSK	2	101.7	98.7	104.7	40.2	37.7	42.7	44.8	44.3	45.3	77.0	75.0	79.0	94.2	90.0	98.3	9.0	9.0	9.0	7.7	7.0	8.3
RUSSIA, MOSCOW	22	97.7	63.7	136.7	36.6	27.3	43.3	47.0	40.0	50.7	77.3	71.0	89.0	97.3	73.3	115.0	8.3	3.0	9.0	8.1	6.3	9.0
RUSSIA, MURMANSK	1	103.7	103.7	103.7	44.3	44.3	44.3	48.7	48.7	48.7	86.7	86.7	86.7	125.3	125.3	125.3	9.0	9.0	9.0	6.3	6.3	6.3
RUSSIA, NOVOSIBIRSK	3	90.2	72.0	102.7	38.2	33.3	42.3	48.6	45.7	51.0	82.0	79.0	86.0	106.1	95.0	113.3	9.0	9.0	9.0	7.9	7.0	8.3
RUSSIA, OMSK	7	78.5	45.7	100.7	36.2	29.3	47.0	47.6	41.0	53.7	82.0	75.0	89.7	101.1	85.0	115.0	8.8	8.3	9.0	7.9	7.0	8.3
RUSSIA, SAKHA	1	86.3	86.3	86.3	32.7	32.7	32.7	47.7	47.7	47.7	81.3	81.3	81.3	96.7	96.7	96.7	8.3	8.3	8.3	7.7	7.7	7.7
RUSSIA, ST. PETERSBURG (LENINGRAD PROV.)	38	78.6	37.0	111.3	32.8	23.3	40.3	43.9	37.7	53.3	80.3	69.7	89.7	83.6	43.3	109.0	8.8	6.3	9.0	7.1	4.3	9.0
RUSSIA, TOMSK	8	97.8	85.3	108.3	37.5	32.0	44.7	47.0	44.3	51.3	80.6	76.3	85.0	105.6	90.0	115.0	9.0	9.0	9.0	7.3	5.7	8.3

RUSSIA, TYUMEN	6	91.8	71.3	123.0	29.8	24.3	32.0	48.2	42.7	53.3	79.4	71.0	83.7	100.8	83.3	117.7	8.3	7.0	9.0	7.2	6.3	8.3
RUSSIA, ULYANOVSK	31	102.9	41.7	136.0	36.5	27.3	45.3	46.6	40.3	53.7	80.2	70.3	88.3	101.5	75.0	126.7	8.9	7.7	9.0	8.0	6.3	9.0
RUSSIA, VLADIMIR	1	81.7	81.7	81.7	37.0	37.0	37.0	49.7	49.7	49.7	87.0	87.0	87.0	108.3	108.3	108.3	8.3	8.3	8.3	7.0	7.0	7.0
RUSSIA, YEKATERINBURG (SVERDLOV PROV.)	4	97.0	65.3	111.3	37.2	35.3	39.3	45.9	44.3	50.3	74.6	71.0	77.3	89.6	78.3	101.7	9.0	9.0	9.0	8.0	7.0	9.0
SLOVAKIA	6	84.8	54.0	103.7	33.5	23.3	44.3	42.8	39.3	46.7	75.9	68.7	80.3	77.5	63.3	93.3	9.0	9.0	9.0	7.0	6.3	7.7
SOUTH AFRICA	6	83.6	45.3	110.3	33.2	29.3	36.3	43.8	37.3	52.7	78.4	71.0	91.0	89.5	70.0	103.3	8.7	7.0	9.0	8.1	7.0	9.0
SPAIN	1	47.0	47.0	47.0	17.7	17.7	17.7	47.0	47.0	47.0	90.7	90.7	90.7	115.0	115.0	115.0	3.0	3.0	3.0	7.0	7.0	7.0
SWEDEN	16	95.8	74.3	141.3	34.0	28.3	40.0	47.2	42.7	53.3	83.4	73.7	88.7	95.5	73.3	113.3	8.4	7.0	9.0	7.8	6.3	9.0
SWITZERLAND	1	96.0	96.0	96.0	31.0	31.0	31.0	51.0	51.0	51.0	78.7	78.7	78.7	93.3	93.3	93.3	9.0	9.0	9.0	7.7	7.7	7.7
SYRIA	1	30.0	30.0	30.0	39.7	39.7	39.7	37.0	37.0	37.0	83.3	83.3	83.3	67.3	67.3	67.3	9.0	9.0	9.0	5.7	5.7	5.7
TUNISIA	5	49.6	39.0	66.7	29.4	26.7	32.3	50.2	41.0	58.3	86.4	73.3	93.0	86.3	71.7	110.0	7.5	5.7	9.0	7.7	7.0	8.3
TURKEY	6	69.3	22.7	88.3	37.9	32.3	44.7	44.1	37.7	47.0	83.3	76.7	87.3	84.3	61.7	100.0	7.9	5.0	9.0	7.2	5.7	7.7
UKRAINE	22	99.4	60.3	125.0	34.2	21.3	39.3	48.8	44.3	53.0	80.5	72.3	91.0	97.3	70.0	114.7	8.9	7.7	9.0	7.9	6.3	9.0
USA	119	61.8	20.0	122.3	32.6	23.0	43.7	44.9	35.3	56.3	80.9	68.3	92.0	84.1	46.7	125.7	8.8	5.0	9.0	7.4	4.3	9.0
URUGUAY	3	90.3	63.3	106.3	30.1	17.7	37.0	47.1	42.7	51.7	85.0	79.3	94.7	104.4	100.0	111.7	6.8	4.3	9.0	8.6	8.3	9.0
YUGOSLAVIA	1	127.0	127.0	127.0	31.7	31.7	31.7	48.7	48.7	48.7	87.0	87.0	87.0	113.7	113.7	113.7	8.3	8.3	8.3	7.7	7.7	7.7
unknown	1	40.7	40.7	40.7	21.3	21.3	21.3	48.7	48.7	48.7	75.0	75.0	75.0	93.3	93.3	93.3	9.0	9.0	9.0	7.7	7.7	7.7
All Groups	764	81.1	19.3	153.3	33.2	7.7	48.3	45.7	33.7	66.3	81.6	68.3	98.3	93.1	41.7	150.0	8.5	3.0	9.0	7.5	4.3	9.0