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ABSTRACT

In recent years, oat is becoming popular in Turkey according to its health benefit claims and oat production is in increase in Turkey especially in Trakya-Marmara region. This study was carried out in 2013-2014 cropping year in Edirne with 44 oat lines and 5 commercials (Kırklar, Kahraman, Sebat, Yeniçeri and Sebat). The experiment was arranged in an alpha lattice experiment design (7 x 7) with three replications. It is aimed to determine yield and some quality parameter performances of oat lines derived from our breeding program.

In the research, the traits such as grain yield (GY), thousand kernel weight (1000-KW), test weight (TW), protein ratio (PR), plumpness (P, sieved 2.2 mm slotted) and groat percentage (GP) were investigated.

The variation among oat lines for grain yield was significant and differences for 1000-KW, TW, PR, P, and GR were also determined. The GY, 1000-KW, TW, PR, P and GP of oat lines ranged between 306.7-914.5 kg/da, 21.8-40.4 g, 48.3-60.8 kg/hl, 9.92-14.02%, 22.7-93.5% and 60.4-76.7% respectively.

The oat line 49 had the highest GY with 914.5 kg/da and followed by oat line 3 with 867.5 kg/da and oat line 29 with 851.7 kg/da, while the lowest GY was obtained from the oat line 20 with 306.7 kg/da.

The oat lines 49, 3, 29, 44 and 23 were hopeful for GY and the oat lines 5, 13, 10, 8, 1, 36 and 16 were hopeful for investigated quality parameters.

Key words: oat (*Avena sativa* L.), grain yield, quality.



Figure 1 The picture shows the oat panicles at anthesis



Figure 2 The picture shows the oat plots at grain filling periods



Figure 3 The picture shows the oat plots at harvest time

Table 1 Mean values related to investigated traits

Genotypes	Grain Yield (kg/da)	1000-KW Ağırlığı (g)	Test Weight (kg)	Protein Ratio (%)	Plumpness Sieved 2.2 mm plotted (%)	Groat Percentage (%)	
49	914.5	a	40.2	54.1	11.5	90.7	71.8
3	867.5	ab	34.6	54.3	10.3	78.4	71.2
29	851.7	a-c	35.5	53.8	13.5	85.7	71.8
44	844.0	a-d	33.0	53.2	10.4	77.9	69.9
23	842.3	a-d	30.5	55.7	12.2	90.8	69.2
45	817.8	a-e	34.4	56.4	12.9	78.2	75.6
42	815.8	a-f	37.0	56.3	12.6	86.9	71.6
48	814.8	a-f	29.6	58.2	11.9	69.9	73.3
25	806.7	a-g	32.4	55.8	12.2	85.0	70.4
5	800.5	a-g	35.9	59.8	12.0	85.5	73.1
26	785.2	a-h	24.0	52.7	10.7	30.1	71.7
22	752.5	b-ı	35.5	55.6	12.3	85.5	72.7
15	752.2	b-ı	37.0	57.2	11.7	92.3	71.2
2	746.0	b-j	38.2	53.8	11.9	85.7	68.4
12	737.8	b-k	31.9	56.3	10.7	72.4	72.5
13	729.5	b-l	31.9	59.1	10.7	79.1	76.7
27	728.2	b-l	31.2	58.1	10.3	85.7	69.1
9	721.8	c-m	36.3	53.0	12.6	80.6	68.6
Kahraman	717.0	c-m	26.1	58.1	11.6	70.6	72.0
41	716.2	c-m	27.9	57.6	11.3	56.1	72.9
31	712.7	c-m	40.4	53.8	12.6	88.3	67.9
10	703.5	d-n	34.1	59.3	11.8	90.8	73.5
8	699.2	e-n	25.0	60.8	11.9	51.2	75.9
11	684.7	e-o	27.5	60.0	11.4	49.6	74.3
Kırklar	684.3	e-o	37.8	56.8	11.1	77.7	74.1
14	676.2	f-o	33.3	55.7	12.3	91.5	73.3
37	670.3	g-p	28.8	57.5	13.3	63.5	71.1
Yeniçeri	669.0	g-p	26.8	55.6	11.8	72.9	75.2
39	658.2	h-p	29.5	51.5	11.9	75.7	69.8
36	647.2	h-p	31.3	59.4	12.8	78.4	73.7
21	641.7	ı-q	27.1	57.2	11.3	58.4	71.2
7	631.5	ı-q	31.0	58.9	11.3	70.6	73.0
6	630.0	ı-q	25.5	55.5	10.9	47.4	73.4
17	629.7	ı-q	24.3	60.6	10.4	58.7	73.6
32	626.2	ı-q	27.6	53.8	11.3	79.9	67.8
16	623.8	ı-q	31.3	58.4	13.1	77.7	73.6
38	620.3	ı-q	29.7	54.8	11.9	53.7	69.0
Sebat	609.5	j-q	21.8	48.3	9.9	22.7	68.2
43	602.3	k-q	31.5	57.3	11.2	77.1	73.1
4	601.8	k-q	29.4	56.4	14.0	82.5	74.0
34	601.8	k-q	27.3	54.2	11.9	50.0	70.9
47	595.2	ı-q	35.4	50.3	12.6	90.6	64.0
28	584.8	m-q	37.9	57.4	12.4	78.7	72.6
33	581.0	m-q	32.9	51.1	11.5	75.2	69.5
19	567.5	n-q	24.2	59.5	12.5	56.5	74.8
46	549.8	o-q	31.3	49.0	12.0	93.5	64.2
24	533.0	p-q	33.1	59.0	13.8	91.3	73.1
35	504.2	p	30.5	56.8	13.0	71.0	72.6
Y-330	306.7	r	24.4	52.0	12.7	32.9	71.3
Mean	685.9		31.3	55.9	11.9	73.0	71.7
LSD (0.05)	141.2						
CV (%)	12.7						

RESULTS

The variation among oat lines for grain yield was significant and differences for 1000-KW, TW, PR, P, and GR were also determined. The GY, 1000-KW, TW, PR, P and GP of oat lines ranged between 306.7-914.5 kg/da, 21.8-40.4 g, 48.3-60.8 kg/hl, 9.92-14.02%, 22.7-93.5% and 60.4-76.7% respectively.

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