

**Supplementary Table S1.** Agronomic traits and seed yield of Hosim compared with two checks in preliminary yield test in Gunwi 2012 (modified from Kim *et al.* 2015).

Genotype	Plant height (cm)	Number of branches /plant	Number of nodes /plant	Number of pods /plant	100-seed weight (g)	Maturity (Mon/day)	Yield (t/ha)
JD11-0070 <sup>z)</sup>	99	3.3	18.4	88.5	16.9	10/10	2.84
Taekwang	76	5.7	17.7	70.9	25.5	09/30	2.77
Wooram <sup>y)</sup>	82	6.1	15.7	112.9	24.1	10/03	3.20
LSD (5%)	7	1.2	1.4	42.5	1.8		0.53

<sup>z)</sup>JD11-0070 was the name of breeding line for Hosim.

<sup>y)</sup>Wooram and Uram (Ko *et al.* 2016) are the same names.

**Supplementary Table S2.** Yields and yield-related characteristics of a high oleic acid line, JD11-0070, and commercial cultivars Daewon and Wooram<sup>2)</sup> in different Korean environments in 2013 (Kim *et al.* 2015).

Location	Genotype	Plant height (cm)	No. of branches	No. of nodes	No. of pods	100-seed weight (g)	Yield (t/ha)
Chuncheon	JD11-0070 <sup>y)</sup>	112	2.3	19.8	85.2	15.8	3.58
	Daewon	100	2.0	18.6	57.2	22.5	3.70
	Wooram	102	0.4	15.9	53.4	24.2	3.54
	LSD (5%)	16	0.6	0.6	18.0	1.8	0.76
Gunwi	JD11-0070	72	6.1	14.7	102.3	16.4	3.06
	Daewon	52	6.6	12.7	86.2	23.9	3.32
	Wooram	60	5.8	12.1	68.0	24.4	3.26
	LSD (5%)	13	2.5	2.2	46.1	3.0	0.94
Jeongup	JD11-0070	63	3.3	15.1	72.1	14.4	3.17
	Daewon	49	2.5	13.4	43.0	19.1	2.53
	Wooram	53	4.5	13.9	75.1	22.7	2.67
	LSD (5%)	16	0.8	1.6	15.6	1.1	0.60
Mean	JD11-0070	82	3.9	16.5	86.5	15.5	3.27
	Daewon	67	3.7	14.9	62.1	21.8	3.18
	Wooram	72	3.6	14.0	65.5	23.8	3.16
	LSD (5%)	54	4.9	5.4	33.4	3.3	0.92
	CV (%)	10.2	20.9	5.4	21.0	5.1	12.2

<sup>2)</sup> Wooram and Uram (Ko *et al.* 2016) are the same names

<sup>y)</sup> JD11-0070 was the name of breeding line for Hosim.

**Supplementary Table S3.** Protein, oil, and fatty acid concentrations of a high oleic acid line, JD11-0070, and the commercial cultivars Daewon and Wooram<sup>2)</sup> in three Korean environments in 2013 (Kim *et al.* 2015)

Location	Genotype	Concentration (%)						
		Protein	Crude oil	Palmitic acid	Stearic acid	Oleic acid	Linoleic acid	Linolenic acid
Chuncheon	JD11-0070 <sup>3)</sup>	39.8	15.0	7.4	3.0	77.8	4.9	6.8
	Daewon	40.1	16.4	10.1	3.2	24.9	53.4	8.4
	Wooram	38.5	16.8	11.3	3.4	24.1	52.3	8.9
	LSD (5%)	3.8	2.3	0.4	0.2	3.8	2.5	1.0
Gunwi	JD11-0070	40.4	16.1	7.6	3.1	79.1	4.2	6.0
	Daewon	38.5	17.3	10.2	3.5	21.2	56.8	8.3
	Wooram	40.5	16.8	10.8	3.8	27.3	50.0	8.0
	LSD (5%)	3.1	2.5	0.3	0.4	1.6	1.8	1.0
Jeongup	JD11-0070	40.8	15.1	7.4	3.2	80.1	3.4	5.8
	Daewon	39.0	17.8	10.4	3.5	22.1	55.4	8.7
	Wooram	38.8	17.3	10.5	3.6	30.8	47.3	7.8
	LSD (5%)	2.6	1.6	0.7	0.4	6.9	5.3	1.0
Mean	JD11-0070	40.3	15.4	7.5	3.1	79.0	4.2	6.2
	Daewon	39.2	17.2	10.3	3.4	22.7	55.2	8.5
	Wooram	39.3	17.0	10.9	3.6	27.4	49.8	8.3
	LSD (5%)	1.6	1.1	0.5	0.3	4.7	3.6	0.9
	CV (%)	11.4	6.5	2.5	5.4	5.4	4.9	6.6

<sup>2)</sup> Wooram and Uram (Ko *et al.* 2016) are the same names

<sup>3)</sup> JD11-0070 was the name of breeding line for Hosim.