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Poster Abstract - F.21

GERMPLASM WITH GOOD COMBINING ABILITY FOR SELECTING RHA LINES IN SUNFLOWER (*HELIANTHUS ANNUUS* L.)

A. DEL GATTO, L. MANGONI, D. LAURETI

C.R.A. Istituto Sperimentale Colture Industriali, Via Cagiata 90, 60027 Osimo (AN), Italy – domenico.laureti@entecra.it

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Five high oleic commercial hybrids, highly productive in the agronomic trials in previous years, were selfed in the 2002 and crossed with two citoplasmatic male sterile (CMS) lines, one conventional-(226) and one high oleic (OL 9) in 2003. The progeny or the crosses were evaluated for their agronomic value in 2004 together with 4 controls, two high oleic and two conventional, under rainfed and irrigated conditions, in a factorial experimental trial replicated two times.

ANOVA showed significant differences between CMS lines in all traits considered, whereas for the RHA (progeny of the hybrids) the GCA (general combing ability) variance was significant only for achenes and oil yield, thousand seed weight and plant height. The line x tester interaction between was never significant. CMS 226 had positive GCA for all traits, whereas for OL9 they were all negative (Table 1). Among the 5 F_2 populations used as germoplasm source, only Panoli RM and Proleic 2004 combined well with both testers for seed yield. The GCA for oil content was never significant and consequently the GCA for oil yield was also low but positive and higher for Proleic and Panoli RM. GCA values for plant height and thousand seed weight the two best RHA populations had positive or negative values but with small absolute values. The average specific combining ability was never significant but the combination of the best combiners gave test crosses comparable with the best controls.

Table 1: General combining ability of 5 population F_2 and 2 tester CMS

Popolations	Achenes yield (q ha-1)	Oil content (%)	Oil yield (q ha-1)	Thousand0 Seed weight (g)	Plant height (cm)
Panoli RM AO	1,76 ab	-0,21 a	0,77 ab	4,89 a	-2,90 bc
Carnia AO	-3,00 d	0,02 a	-1,40 d	-2,80 b	1,23 b
Majus AO	-0,25 bc	0,31 a	-0,06 bc	6,34 a	-0,15 b
Majus AO	-1,34 cd	0,19 a	-0,57 cd	-7,92 c	-9,77 c
Proleic 204 AO	2,83 a	-0,32 a	1,25 a	-0,51 d	11,60 a
226	3,61 a	-0,47 b	1,54 a	5,45 a	9,10 a
OL9	-3,61 b	0,47 a	-1,54 b	-5,45 b	-9,10 b

Means with different letters are different for P≤ 0,05.