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STABILITY PARAMETERS FOR SEED YIELD OF SESAME BLENDS AND THEIR COMPONENT LINES
BY

Samar A.M. El-Shakhess,; Sedeek, F.Sh. and Osman, E.B.A.
Oil Crops Res. Sec., Field Crops Res., Inst., Agric., Res. Cent., Giza

ABSTRACT

This study was undertaken to evaluate a practical method that describes the relative worth of genotypes in blend combinations. Six pure lines (three from branched types and three from non- branched types) were compared when grown as a sole pure lines and in difference blend combinations in ratios of 3:1, 1: 3 and 1: 2: 3 in nine environments (3 locations and 3 years) to evaluate phenotypic stability for seed yield/fed. The three blend lines from branched type were (1 MGS_8:3 MGS_{15}), (1 MGS_8:3 MGS_{25}) and (3 MGS_8:2 MGS_{15}:1 MGS_{25}) and the three blend lines from non-branched type were (1 $Shandweel_3$:2 $Shandweel_5$:3 $Sohag_1$), (3 $Shandweel_3$:2 $Shandweel_5$:1 $Sohag_1$) and (2 $Shandweel_3$:3 $Shandweel_5$:1 $Sohag_1$). All blends were stable according to phenotypic stability method and had high mean performance in seed yield/fed. Blend responses (expressed as deviation of the blend yield from pure – stand component average) ranged from – 18.9 to 12.4% and from – 19.4 to 4.7 % for branched and non – branched types, respectively. The three blend of the branched types and the three blends of the non-branched type exhibited positive blend response for yield/fed.

Key words: blend varieties, stability, blend response, sesame.

INTRODUCTION

Sesame (*Sesamum indicum* L) is an important oil seed crop being cultivated in the tropics and the temperate zone of the world for its edible oil, protein content and quality vitamins and amino acids. Sesame has received increasing interest as a source of good quality vegetable oil with antoxidative constituents (i. e. sesaminol, seamolinol and tocopherol) and as an excellent source of protein in developing countries.

Yield improvement is a major interest of plant breeders. The beneficial competition between two crop species is often incorporated into farming systems that protect the farmer in developing countries against crop failures. Less recognized, but also of great consequence, is the competition that occurs between contrasting genotypes within a single crop species.

The growing blends of already existing cultivars, has been recognized as a viable way to increase and stabilize the yield of self crop pollenated. Much information can be obtained by studying the effects of blending two or more genotypes in sample mixtures. Smithson and Lenne (1996) reported that the varietal mixtures are presently a viable strategy for sustainable productivity in subsistence agriculture. In their opinion, mixtures have potential for improvement without sacrifice of diversity and are an important resource for future global food production. They added that blends may have an expanding role in modern agriculture in situations where qualitative unforminty is not of girding priority. Most of the studies of blends, or mixtures, in self – pollinated crops have shown a slight advantage in yield or outyield the highest component. Allard and Adams (1969) indicated that average of wheat increased by 6% when surrounded by plant of another varieties. Mixtures in wheat yield have been reported to have outyielded and were more resistance to stress conditions than the mean