Improving earliness index and lint yield by pedigree selection in two populations of Egyptian cotton under late planting

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Abstract:

Two cycles of pedigree selection for earliness index and lint yield/plant were achieved in two populations of Egyptian cotton (G. barbadense L.) under late planting condition. The genetic materials were the F6, F7 and F8- generations of (Giza 80 x Pima 56)/Giza 91 (pop. I) and Dandara/ Giza 80 (pop. II). The genotypic coefficients of variation (gcv) in the F6-genreation were 13.35 and 14.69% for earliness index, and 23.70 and 27.60% for lint yield/plant for pop. I and pop. II; respectively. The remained gcv after two cycles of pedigree selection were 8.12 and 10.60% for earliness index, and 22.59 and 21.50% for lint yield/plant for pop. I and pop. II; respectively. The respective realized heritability was 0.4550 and 0.2731 for earliness index, and 0.4128 and 0.3970 for lint yield/plant. The average direct observed gain was significant and accounted for 5.59 and 3.80% for earliness index, and 6.68 and 5.45% (ns) for lint yield/plant from the bulk sample for pop. I and II; respectively. Two promising superior families were isolated from each population in both of earliness index and yield. For example, concerning earliness index, the best superior family No. 175 showed significant (P

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Egyptian cotton, late planting, pedigree selection, observed gain, realized heritability, parent-offspring regression.

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