

ABSTRACT

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The present study aimed at the determination of some molecular markers for fiber fineness, fiber length, boll weight and lint percentage in segregating generations of two interspecific cotton crosses Giza 45 x TAMCOT Luxor and Giza 83 x Deltapine. By using total protein, RAPD and ISSR analyses 2, 3 and 5 positive markers are produced for fiber fineness trait and 1, 3 and 4 for fiber length trait and 2, 4 and 4 for boll weight trait and 3, 2 and 5 for lint percentage trait, respectively. The obtained markers could be used for selecting some fiber properties; i.e. fiber fineness and fiber length traits all together depending on some positive markers. Also, it could be used for selecting some yield components; boll weight and lint percentage all together. These molecular markers could be considered as reliable markers in Marker-assisted selection (MAS) in cotton breeding programs. As general conclusion, our investigation revealed that ISSR technique is better than RAPD technique to obtain molecular markers for fiber fineness, fiber length, boll weight and lint percentage traits in cotton.

Key words: Cotton, *Gossypium sp.*, Total protein, RAPD-PCR, ISSR-PCR, Molecular markers, fiber fineness, fiber length, boll weight, lint percentage.

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LIST OF ABBREVIATIONS

10-mer primer	10 oligonuclutide primers.
APS	Ammonium per sulfate.
BSA	Bulked segregant analysis
BW	Boll weight.
CTAB	hexadecyl trimethylammonium bromide (extraction buffer).
FF	Fiber fineness
FL	Fiber length
KDa	Kilo Delton.
ISSR	Inter simple sequence repeats
L%	Lint percent.
LY/P	Lint yield per plant
P	Fiber strength (Pressley).
MAS	Marker assisted selection
Mic.	Micronair reading.
bp	Base pair.
PCR	Polymerase Chain reaction.
PVP	Polyvinyl pyrrolidone.
RAPD	Random amplified polymorphic DNA.
RFLP	Restriction fragment length polymorphism.
SDS-PAGE	Sodium Dodecid sulfate-Polyacrylamide Gel Electrophoresis.
SCY/P	Seed cotton yield per plant
SL	2.5% span length in mm.
SSR	Simple Sequence Repeats.
UR	Staple uniformity.