Abstract

The present study was carried out to investigate the effect, lint grade, fiber properties and spinning variables on yarn quality properties of three Extra long Staple Egyptian cotton varieties namely Giza 45, Giza 87 and Giza 88 in 1998 and 1999 seasons. There lint grades is G/FG, G and FGF/G were chosen from each variety and spun into 60s carded, 60s, 90s and 120s combed yarns at 3.6 twist factor.

Fiber length measurements, fiber strength and elongation % as well as fiber fineness and maturity were determined. It is urged need to estimate yarn strength, elongation % yarn c.v neps, thin and Think places.

The obtained results cleared that:

1999 growing season produced longer, stronger more mature and more uniform fibers compared to 1998 season. Moreover yarns spun from cottons produced in 1999 were superior in strength, elongation, evenness contain lower numbers of neps, thin and thick places than cottons produced in 1998.

Giza 45 exceed Giza 87 and Giza 88 in length and fineness, while Giza 88 surpassed Giza 45 and Giza 87 for fiber strength. Giza 45 surpassed Giza 87 and Giza 88 in yarn strength and elongation while Giza 88 exceeded Giza 45 and Giza 87 in yarn eveness and

the lower content of neps, thin and thick places in the spun yarns.

G/FG lint grade exhibited longer, stronger, more uniform and more mature fiber with lower short Aber content compared to Good grade while GF/G ranked third. The spun yarns from spun from God and FGF/G grade regardless the cotton variety particularly in the fine counts.

The finer counts showed lower strength and evenness with higher content of neps, thin and thick places compared to the crasser ones. The compared yarns were superior to caroled ones in strength , elongation, evenness and imperfections.

Simple correlation results revealed that most of the studied fiber properties showed a positive correlation with the yarn characters with the exception for , short fiber content and length cv% whereas fiber properties exhibited negative correlation with thin, thick places, number of neps/100 , and yarn c/v%, while short fiber and fiber c.v% had positive significant effect.

As for stepwise analysis, the results depend on the difference between varieties, yarn count used and the spinning variable, ie combing and carding process.

Contents

Part 3