ABSTRACT
In the present study, conventional ring and compact spinning systems were modified with the air nozzle placed below the drafting system of the spinning frames. The modification of the conventional ring spinning system was called ‘Jetring’, while the combination of air nozzle and compact spinning system was named ‘Compact-Jet’. Actually, in literature there is not this kind of system, and thus the Compact-Jet spinning system is a new application in the spinning field. When the properties of ring, Jetring, compact and Compact-jet yarns were compared, it was determined that modified spinning systems contribute to an effective reduction in the number of long hair length groups as well as insignificant changes in twist and tensile properties. The reduction in S3 yarn hairiness values reaches up to 40% in the Jetring spinning system. However, the Compact-jet spinning system improves the hairiness of conventional ring spun yarns by over 50%. A relatively higher reduction in yarn hairiness is possible with proper changes in the nozzle geometry and air pressure level. Nevertheless, in comparison to the Jetring spinning system, the Compact-jet spinning system is very effective regarding yarn properties, particularly yarn hairiness. The system even increases the yarn tenacity slightly.