In this study, wet wipes were produced for body applications with nonwoven fabrics consisting of polyester and cellulose (viscose and Tencel). Fabrics were wetted by natural-based wetting solutions (rose water, olive oil) which were functionalized by sodium alginate and natural antibacterial agents (cinnamaldehyde and geraniol) without preservatives. Besides physical characteristics (weight, thickness, porosity, fiber orientation), bending rigidity, Handle-O-Meter measurements, and moisture management test parameters of the nonwoven fabrics were determined. Subjective hand and wiping performances of produced wipes were determined by subjective evaluations carried out on 10 female subjects. According to the results, 100% Tencel and its blend with viscose have good absorption and moderate transfer characteristics. Polyester content up to 60% is acceptable for wet wipes for the body according to their liquid absorption, transfer, and subjective evaluation results if fabric weight is sufficient. Among the functionalized wetting solutions, antibacterial performance of the solution including olive oil, sodium alginate and cinnamaldehyde was the maximum and it has acceptable hand values according to objective Handle-O-Meter results and subjective evaluation results.