In this study, which was carried out within a national project, topsheet layer of a designed foot sweat pad constituting of polypropylene or polylactic acid (PLA) nonwoven fabrics were modified by natural based antibacterial agents. Antibacterial herbal agents (cinnamaldehyde, geraniol, phenyl ethyl alcohol) which also have pH buffering capabilities and natural pleasing fragrances were sprayed by suitable solvents (ethanol) or PLA based biopolymers which prepared by three different chemical methods. Performance of PLA nonwoven fabric was compared with an identical PP fabric for direct spraying methods to determine usability of biodegradable polymers for disposable hygienic products. Besides antibacterial and pH buffering performances of antibacterial agents, effects of topsheet antibacterial treatments on thickness, air permeability, absorption period (drop test) performances were also analyzed. According to the results, antibacterial performances can be ranked as cinnamaldehyde, geraniol and phenyl ethyl alcohol from the best. Besides a slight decrease about liquid absorption performances, all of the treated topsheet layers are sufficient for an absorbent hygienic product. Cinnamaldehyde has a good performance about pH buffering especially on basic sweat which is hazardous for the skin. PLA fabric has acceptable performance as topsheet layer when compared to PP that biodegradable polymers can be used for disposable hygienic products.

Key Words: antibacterial sweat pad, natural antibacterials, biopolymer, pH buffering.