Vacuum-packaged ground ostrich meat patties containing 2% sodium lactate (SL), 0.2% rosemary extract as oleoresin (RE), or their mixture (MIX) were evaluated and compared with control for their storage stability at 3 +/- 1 degrees C in the dark by measuring pH, 2-thiobarbituric acid-reactive substance (TBARS) values, sample color (CIE L*, a*, b*, Hue and Chroma), and microbiological content. The pH values of ostrich patties, ranging from 6.03 to 6.13, were not affected by treatment (P < 0.05). At 9 d of storage, TEARS concentration for control samples containing no additives was 1.64 mg malonaldehyde/kg meat. Addition of RE to the ground ostrich meat inhibited lipid oxidation during storage at 3 +/- 1 C (P < 0.05). TBARS values of SL-added samples were lower than control samples (P < 0.05); addition of SL also delayed the oxidation. It was found that RE had a protective effect on color, whereas addition of SL decreased CIE a* values (P < 0.05). SL, either alone or with RE, was effective in inhibiting total aerobic bacteria (TAB), coliforms, lactic acid bacteria (LAB), and Brochothrix thermosphacta in ostrich patties (P < 0.05) and provided a 2-log reduction in microbial population during storage. In addition, RE did not have a significant effect on microbial growth at the concentration used in this study.