Challenge tests with eight brands of fresh ricotta showed rapid growth of Listeria monocytogenes and significant variability in physical-chemical characteristics. Thus, two cardinal parameters models were developed for the growth of L. monocytogenes in ricotta including, respectively, terms for temperature (Model 1) and temperature and pH (Model 2). Also an extensive, existing growth model including the effect of organic acids (Model 3) was product recalibrated to predict growth of L. monocytogenes in ricotta. Interestingly, a lack of anti-listerial effect of organic acids in ricotta was observed in this study. The range of applicability of Models 1 and 2 in ricotta (characterized by absence of competitive microbiota) included storage at temperatures from 4.1 to 20.6°C, pH from 5.5 to 6.6, moisture contents from 72% to 82%, NaCl from 0.38% to 0.60%, concentrations of acetic acid from 579 to 1559ppm in the water phase, citric acid from 14,774 to 46,116ppm in the water phase, and lactic acid from 0 to 4146ppm in the water phase. Comparing observed and predicted maximum specific growth rates of L. monocytogenes in ricotta showed a bias-factor significantly above 1, for existing models developed for broth and these models were thus fail-safe with predicted growth being faster than observed, while typically below 1 for models developed for other food types. The models developed in the present study showed bias-factors of 1.10, 1.06 and 0.78, respectively, for Model 1, 2, and 3. In particular, Model 1 and 2 developed and successfully validated could allow an easy determination of safe shelf-life of ricotta and facilitated the reformulation the product with the aim to increase shelf-life or safety.