The elimination of spoilage bacteria such as lactic acid bacteria, psychrotrophs and mesophiles is important for stability in meats. The objective of this work was to verify the effect of different doses of gamma radiation on the lamb meat stored under refrigeration. Cuts of lamb loin (Longissimus dorsi) were vacuum packaged and irradiated with doses as follows: 0 (control), 1.5 and 3.0 kGy. Meats were stored at 1°C for 56 days. Samples were analyzed on days 0, 14, 28, 42 and 56 for lactic acid bacteria, anaerobic mesophiles, anaerobic psychrotrophs, coliforms at 45°C, Staphylococcus aureus and Salmonella spp. Two repetitions of the experiment were performed until now. There was no presence of Salmonella spp. and it were estimated <10 CFU/g for coliforms at 45°C and S. aureus in all samples. Meat from control group presented values of 5.8, 6.3 and 5.5 log CFU/g on day 0 and 8.5, 9.0 and 8.2 log CFU/g on day 28 of storage for lactic acid bacteria, mesophiles and psychrotrophs, respectively. Considering lactic acid bacteria, mesophiles and psychrotrophs, respectively, treatment 1.5 kGy presented 2.4, 4.1 and 2.4 log CFU/g on day 0 and 6.5, 6.8 and 7.4 log CFU/g at 56 days of storage, while treatment 3.0 kGy presented 2.1, 2.3 and 1.9 log CFU/g on day 0 and 5.9, 6.2 and 6.0 log CFU/g at 56 days of storage. Results indicate that irradiated meat had higher shelf-life compared to control, since they showed acceptable values until day 56 of storage.