A study was conducted to determine the effect of feeding with diets containing kefir on growth performance and fatty acid profile of rainbow trout (Oncorhynchus mykiss). Four isonitrogenous (450 g protein kg\(^{-1}\)) and isocaloric (4325 kcal kg\(^{-1}\)) diets were prepared in trout feed to contain 0 (control), 20, 50 and 100 g kg\(^{-1}\) kefir. Fish, initial weight of 46 g, were randomly distributed into triplicate 520-L fibreglass tanks in freshwater flow-through system. Fish were fed at 4% of the body weight thrice a day for 12 weeks.