Immune resistance of rabbits to the hard tick Rhipicephalus appendiculatus induced by combined tick infestations and immunization with solubilized midgut membrane proteins were compared with resistance due to 1-3 infestations or immunization alone. Results demonstrate that the level of exposure of rabbits to ticks used in the study does not significantly affect the immune expression resulting from immunization and that the latter augments the resistance due to infestation.