This article shows that experimental spiroplasma infection in the rat is enhanced by hyperbaric oxygen suggesting that the organism survives high levels of the oxygen radical. This biologic trait differs from other bacteria and may account for the abundant evidence of oxygen radical damage in TSE, especially since experimental scrapie infection is also stimulated by high levels of oxygen radicals. Spiroplasma infection in the rat was susceptible to trimethoprim sulphasoxazole antibiotics.