Antibody Response of Sheep and Goats in Saudi Arabia to the Live Attenuated Rift Valley Fever Vaccine

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Abstract

A field trial was performed on 30 female sheep and goats as a vaccination group and 33 males as a control to evaluate the immunogenicity of the live attenuated RVF vaccine (Smithburn strain). Immunoglobulin M (IgM) antibodies to RVF virus were detected in 10%, 3% and 10% of vaccinated animals in the first, second and third week following inoculation, respectively. Immunoglobulin G (IgG) antibodies were detected in 37%, 80% and 87% of vaccinated animals in the second, third and fourth week, respectively. Regarding detection of IgM and IgG antibodies, significant differences were observed between vaccinated and control animals (p-value = 0.005 and 0.0002 respectively). The results demonstrate a strong positive association between detection of IgG antibodies in the sera of vaccinated animals and vaccination (OR = 208, p-value = 0.0002).

Both sheep and goats in the vaccination group responded to the vaccine. No significant difference was observed between vaccinated sheep and goats regarding detection of IgG antibodies in the second, third or fourth week following inoculation. Regarding detection of IgM antibodies, significant differences were observed between vaccinated sheep and goats (p-value = or < 0.005). The percent of IgM antibodies positive sheep was more than the percent of IgM positive goats in the three examinations.