

## Investigating the prevalence of rotavirus and its early detection in calves of Kuwait dairy farms using molecular techniques

Mohammad Alotaibi and Sami Al Amad  
Kuwait Institute for Scientific Research, Kuwait

**Statement of the Problem:** Rotavirus is one of the main pathogens causing morbidity and mortality in neonatal dairy calves worldwide, and is responsible for 30-44% loss in cattle. It is the most common etiologic agent of diarrhoea in neonatal dairy calves and children, the dominant type being group A. Another impact of the disease is the massive financial loss in the livestock industry. In Kuwait, viral diseases are the major cause of high mortality and morbidity rates in young dairy calves. The proposed study is intended to assess the prevalence of rotavirus in dairy calves by applying molecular diagnostic techniques.

**Methodology:** This project is designed to compare molecular with immunological diagnostic methods for the early detection of rotavirus in calves in Kuwait. Evaluation of detection methods for viral particles and ribonucleic acid (RNA) was performed using latex agglutination (LTA) and reverse transcriptase-polymerase chain reaction (RT-PCR).

**Findings:** A total number of 270 fecal and 10 water samples were collected from farms Sulaibiah and Kabd. The fecal samples in triplicate from calves under one year of age based on age and gender. The foecal samples were suspended in phosphate buffer saline (PBS) and tested with Latex Agglutination and 14% of samples showed presence of rotavirus, while RT-PCR showed 30% of rotavirus. These findings indicate that the RT-PCR assay is more specific and sensitive and can be effectively used for the early detection of rotavirus in foecal calf samples.

**Recommendations:** The following are the recommendations for early detection of rotavirus in calves: 1. isolation of infected calves to prevent spread of rotavirus between herds. 2. application of rotavirus vaccine to minimize the chances of calves for infection, and 3. application of appropriate diagnostic method by farmers and livestock companies to investigate the presence of rotavirus instantly and take the required actions immediately.

### Biography

Dr. Mohammad Alotaibi, graduated from University of Leicester in the UK, is an expert in pathogenic food-borne viruses who is a researcher in Kuwait Institute for Scientific Research (<http://www.kisr.edu.kw>). He is also an expert in inactivation of pathogenic microbes including viruses and bacteria using solar irradiation of water especially in places under natural crises where water sanitation infrastructure is destroyed. He has published many original scientific papers in international journals. Dr. Alotaibi has ongoing research projects including the research that will be presented in the conference for the early detection of rotavirus in calves in Kuwait and its impact for the morbidity and mortality of this virus.

maotaibi@kisr.edu.kw

 Notes: