

KAYLA COLEMAN, MARK FLOOD, Forensic Science Program, Fairmont State University, Fairmont, WV, 26554 and STEPHANIE JORDAN, Pierpont Community and Technical College, Fairmont, WV 26554. An evaluation in the quality of forensic analysis on blood samples contaminated with chlorinated bleach.

Earlier scientific work has shown that household chlorinated bleach can have a negative impact on the analysis of blood samples in forensic science applications. The goal of this study was to determine if the presence of chlorinated bleach had a negative impact in blood identification, blood typing, and DNA analysis. The methods used to test for the impact of bleach on blood samples were divided into three stages. First, the samples were observed when sprayed with luminol in a darkened room. Second, the samples underwent ABO forward and reverse blood-typing. Third, DNA was extracted from the blood samples, underwent PCR, and were analyzed through gel electrophoresis. The luminol analysis results showed that the greatest observable chemiluminescence was exhibited by blood samples that contained the most concentrated bleach solutions (100% and 50%, respectively), while the least luminescence was seen in the samples mixed with 10% bleach solution and the control. In regards to ABO blood-typing, only the controls and trial 1 with the 10% bleach solution showed any signs of agglutination. Lastly, the gel images produced through electrophoresis showed bands for most of the samples. Those that were mixed with 100% bleach were noted as being extremely faint, while the control and samples mixed with 10% bleach were most noticeable. Based on the data collected and observed, household bleach does have a negative impact on the analysis of human blood, and thus interferes with forensic work.