ABSTRACT

Ananda Muhammad Bisma, 24020220140051. **The Impact of *Dactyloscopic Powder* on DNA Stability in *Touch DNA* Samples.** Under the guidance of Anto Budiharjo and Vira Saamia.

Successful law enforcement in criminal justice relies heavily on the ability to collect and analyze strong evidence. One type of evidence that is important in crime investigations is Touch DNA collected from fingerprints. Touch DNA refers to DNA left behind through contact with surfaces and can be used for individualization and phenotype determination. Rapidly evolving DNA extraction and analysis techniques allow the determination of suspects based on DNA left at the crime scene. Research was conducted to evaluate the effectiveness of Dactyloscopic Powder on DNA stability in Touch DNA samples. Dactyloscopic Powder is used to visualize latent fingerprints on various surfaces, but is thought to affect DNA stability. The study was conducted using 30 DNA samples from 5 volunteers which included touch and buccal swab samples. The results showed that the use of black powder caused more significant DNA degradation than magnetic powder, especially on Touch DNA samples. In contrast, buccal swab samples were more stable and yielded higher DNA concentrations. DNA degradation was measured using the Degradation Index (DI), which showed that black powder was more damaging to DNA than magnetic powder, especially in Touch DNA samples.

Keywords: Touch DNA, Dactyloscopic Powder, DNA stability, latent fingerprint, forensics.