

Forensic scientists can use a *shedder test* to determine the average amount of skin cells shed from leaving a fingerprint. This information is used to determine the likelihood that someone is to leave touch DNA from contacting an object.

Generally speaking, touch DNA is more difficult to find because of the many variables involved with its transfer and retention, such as how much oil a particular fingerprint will leave, or how many skin cells will be shed in that fingerprint. Furthermore, the length

Chart 1: Display of amounts of shogun shells both fired and fired as well as amount verified for containing DNA displayed per participant

Conclusion

Similar studies have been conducted with different variables using different firearms as well as different

showed that pistol bullet casings made of brass and nickel plated yielded results ranging from 13% to 36% DNA recovered with a similar procedure. The results of this experiment yielded approximately 18.18% DNA recovery. In conclusion, it is possible to recover touch DNA from fired and unfired shotgun shells with a similar rate of success seen for bullet cartridge cases made of nickel and brass. While the percentage of recovery is relatively low, it is evidence that touch DNA can be recovered from both fired and unfired shotgun shells.

References

¹Gilder, Jason R., Travis E. Doom, Keith Inman, -Specific Limits of Detection and Quantitation for STR-Based DNA *Journal of Forensic Sciences* 52, no. 1 (January 2007): 97 101. doi:10.1111/j.1556-4029.2006.00318.x.

²Joseph Bl

Forensic DNA Analysis, 3 18. CRC Press, 2013. <http://www.crcnetbase.com.unh->

proxy01.newhaven.edu:2048/doi/abs/10.1201/b15361-3.

3

Thresholds and Sensitivity: Establishing RFU *Journal of Forensic Sciences* 58, no. 1 (2012). doi:10.1111/1556-4029.12008.

⁴Mottar, Ashley Marie. *OPTIMIZATION OF RECOVERY AND ANALYSIS OF TOUCH DNA FROM SPENT CARTRIDGE CASINGS*. Thesis. Michigan State University, 2014. N.p.: n.p., n.d. Print.

5

Firearm Fingerprinting: Comparing Evidence Production and Identification Outcomes Touch AMi08uQADf W6

The Rifleman's Journal. Accessed June 23, 2015.

Acknowledgements

We would like to thank and acknowledge the Summer Undergrad Research Fellowship for this opportunity to conduct this research. We also would like to thank Carol Withers and the entire SURF faculty team, as well as Dr. Heather Coyle and Dr. Claire Glynn for their assistance with this project. Additionally I would like to thank Peter Valentin for his mentorship and guidance through this project.



<http://riflemansjournal.blogspot.com/2010/09/equipment-making-of-rifled-barrel.html>.

Anthony J. Saitta is a senior at the University of New Haven enrolled in the Henry C. Lee Institute of

science in both Forensic Science and Chemistry, and set to graduate May of 2016. He plans to continue this research further through the year continuing work on DNA profiling with touch DNA samples. He plans on continuing his education in a graduate program in Forensic Science