B49 Determination of Hand Deposited GSR Obtained From Shootings Carried Out With a Pistol and Cartridges Produced by TMCF Using SEM/EDS Method

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Shooter identification is of importance in criminal firearm cases in order to reveal the manner of death or injury (murder, suicide, accident). Scientifically, shooter identification is possible by analyzing the gunshot residues (GSR) obtained from the suspects' hands.

When a weapon is fired, GSR are discharged at high velocity from the muzzle and are expelled from ejection port. Some of the GSR that are expelled from the ejection port are deposited on the firing hand.

There is no scientific study about the analyses of GSR on firing hands of Turkish made ammunitions. For this purpose experimental shootings were carried out using 9mm Parebellum type cartridges, all produced by Turkish Machining and Chemistry Foundation (TMCF) and a Atmaca 53 pistol performing one, two, three and four shots with the right hand.

Firing hands were sampled by using aluminum stubs coated with double-sided adhesive. Shooter's hands were washed and dried after each test firing.

SEM/EDS analyses for GSR particles were carried out using a JEOL 5600LV scanning electron microscope equipped with a LINKISIS 300 X-ray analyzer.

The results obtained in this study indicate that elemental composition of the GSR of the studied cartridges were found compatible with the elemental composition of the original chemicals of them. The GSR results showed the following elemental distribution to TMCF cartridges: unique particles (PbSbBa, SbBa), indicative particles (PbSb, PbBa, Pb,CuZn, CuZn, Cu, Zn, Fe, Pb).

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