

Forensic scientists recover fingerprints from foods

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(Phys.org) —Forensic scientists at the University of Abertay Dundee have recovered latent fingerprints from foods – publishing the UK's first academic paper on this subject.

Only two other studies have ever reported successfully recovering fingerprints from foods, but the research for these took place in India and Slovenia using [chemical substances](#) that are not routinely used here in Britain.

Foods are notoriously difficult surfaces to recover prints from, so are often overlooked as items of evidence.

However, by modifying an existing technique that was initially designed to recover fingerprints from the sticky side of adhesive tape, the team at Abertay have shown that this need no longer be the case.

The publication of their research – in the forensic science journal *Science & Justice* – means that others will now be able to replicate their results.

Dennis Gentles, a former [crime scene](#) examiner and forensic scientist who has worked at Abertay University for the past ten years, explains why this is so significant:

"Although there are proven techniques to recover fingerprints from many different surfaces these days, there are some surfaces that remain elusive, such as feathers, human skin, and animal skin.

"Foods such as fruits and vegetables used to be in that category, because their surfaces vary so much – not just in their colour and texture, but in their porosity as well. These factors made recovering fingerprints problematic because some techniques, for example, work on porous surfaces while others only work on non-porous surfaces.

"Using the right technique is of the utmost importance because if you use the wrong one, it can damage the print and destroy what could have been a vital piece of evidence.

"The fact that we've managed to successfully recover prints from such difficult surfaces as foods is another step forward in the fight against crime. It may not seem like much, but a piece of fruit might just be the only [surface](#) that has been handled in a crime scene so developing a

trusted and tested technique to recover fingerprints from such surfaces is something to be valued by crime scene examiners."

Because of the differences between the substances available in the UK and those used in the other studies, the team at Abertay began by testing a selection of the techniques currently recommended by the Home Office for recovering fingerprints.

Disappointingly, their results showed that few of these techniques – when applied to foods including apples, tomatoes, onions and potatoes – produced a print of high enough quality for it to be presented as evidence in court.

However, when they modified a substance known as Powder Suspension (PS) – a thick, tar-like substance – they found it produced a clear, high-quality mark on the smooth-surfaced food items such as the onions, apples and tomatoes.

Dennis Gentles continues: "There are about 15 techniques that are currently recommended by the Home Office for recovering prints – from a variety of surfaces – and research teams are constantly refining them and developing new ones so that the police can get as much evidence of as high a quality as possible to help with an investigation.

"Although Powder Suspension was initially developed to recover prints from the sticky side of [adhesive tape](#), it's since been found to work on other surfaces, so we wondered whether it would work on foods, as this was something it hadn't been tested on before.

"The smooth surface of an apple is very different from that of sticky tape though, so such a thick substance wasn't going to produce the same results on such a different surface. So we tried altering the formulation a bit, making it more dilute than that suggested by the Home Office, and

found that it out-performed all the other methods we tested.

"Although there's still a considerable amount of research to do before we can recommend techniques for all types of foods, we've shown for the first time that it really is possible to recover fingerprints from them – something that was previously thought to be unachievable. This means the police will now be able to gather even more evidence to present in court, adding more weight to their investigations."

[Forensic scientists](#) at Abertay University have made a number of forensics breakthroughs in recent years, notably recovering latent (or invisible) fingerprints from fabrics for the very first time in 2011.

More information: This study – entitled "A preliminary investigation into the acquisition of fingerprints on foods" - was published in the forensic science journal *Science & Justice*.

Provided by University of Abertay Dundee

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