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Der Pharmacia Lettre, 2015, 7 (5):325-332
(http://scholarsresearchlibrary.com/archive.html)

Scholars Research Library
ISSN 0975-5071
USA CODEN: DPLEB4

A latent finger printing technique by using turmeric, chilli, pepper and coal in forensic detection

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ABSTRACT

In this research, we have used four different powders to develop finger print images from glass surface. Those four powders were coal, turmeric, pepper, chilly. These powders were preferred because they are cheap and non toxic. The handling and processing is easy as well. The test finger prints were made on the glass surface of petri plate/conical flask. The powder was sprinkled over the test surface and the images were processed. Coal powder gave the best result.

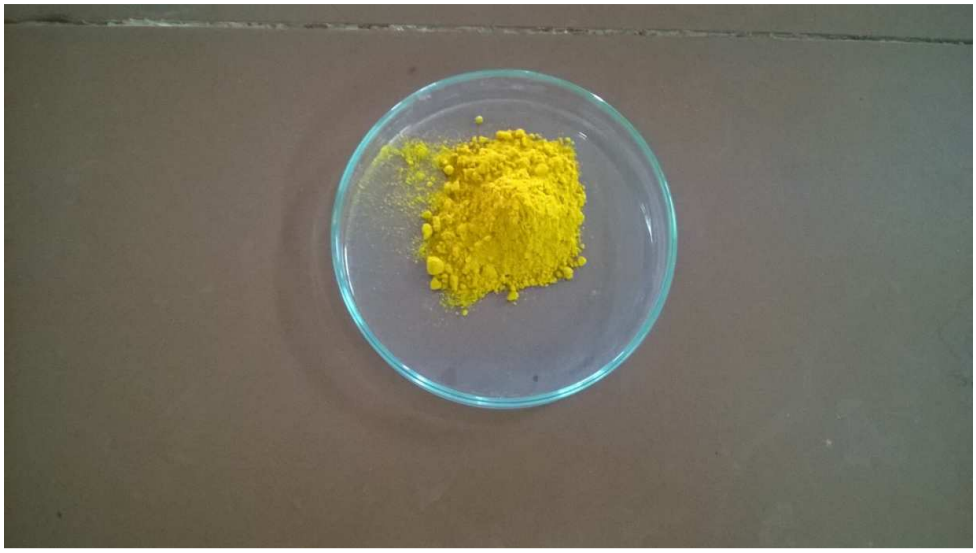
INTRODUCTION

When it comes to key identifications in forensic field, finger prints are one of the major evidences. Three kinds of finger prints could be generally found in the crime scene. They are latent finger prints, impression finger prints, and visible finger prints. Latent finger prints can't be seen with the naked eye and so they have to be enhanced for easy identification. Though various modern methods are available these days the traditional powdering method is still being followed. The powder is dusted over the required area. Then the powder will adhere to sweat, oil or some other material that is being left behind in the finger print. [1] there are three glands which makes secretions from the skin. They are sebaceous glands, sudoriferous ecrine and apocrine glands. [2] So many techniques like blue powder, Silica G can be used. Even natural powders used during holy celebration have given good results so far. [3-10]

MATERIALS AND METHODS

Glass petri plates were used to collect latent finger prints. The test latent prints were primarily obtained with sebum from forehead. The method adopted is powder dusting. The powder is first sprinkled over the surface and then with the help of a brush the excess powder is brushed away. Then the finger prints developed were documented.

Turmeric:
Solid turmeric was crushed with mortar and pestle. After once fine powder like form was obtained they were dried to remove the moisture content. Now the powder is ready to be used for analysis.



{Fig.1}-Turmeric powder

Pepper:

The pepper seeds were crushed to a fine powder form. Mortar and pestle were used. Then a sieve was used to remove the unwanted materials. The powder is ready for usage.

{Fig.2}-Pepper powder

Chilly powder:
Red chillies were used for this purpose. The seeds were removed and then the chillies were crushed to powder form. A sieve was used to remove the needless materials.

{Fig.3}-Chilly powder

Coal powder:
Black coal was crushed to fine powder using mortar and pestle. Then it was stored with precaution.

{Fig.4} -Coal

Preparation of test latent finger prints and processing:
The test finger print is obtained by firmly pressing the thumb on the glassware with a bit of sebum collected from forehead. Then the respective powders are sprinkled over the glassware. After some time with a help of a fibre brush the excess powder is brushed off. Then the finger prints were documented.

Uplifting:
After getting the image of the test latent finger print, cellophane tape is rolled over the test surface from one end to the other end. Care should be taken to avoid air bubble formation. Then after some time the tape is removed carefully and pasted over a sheet.

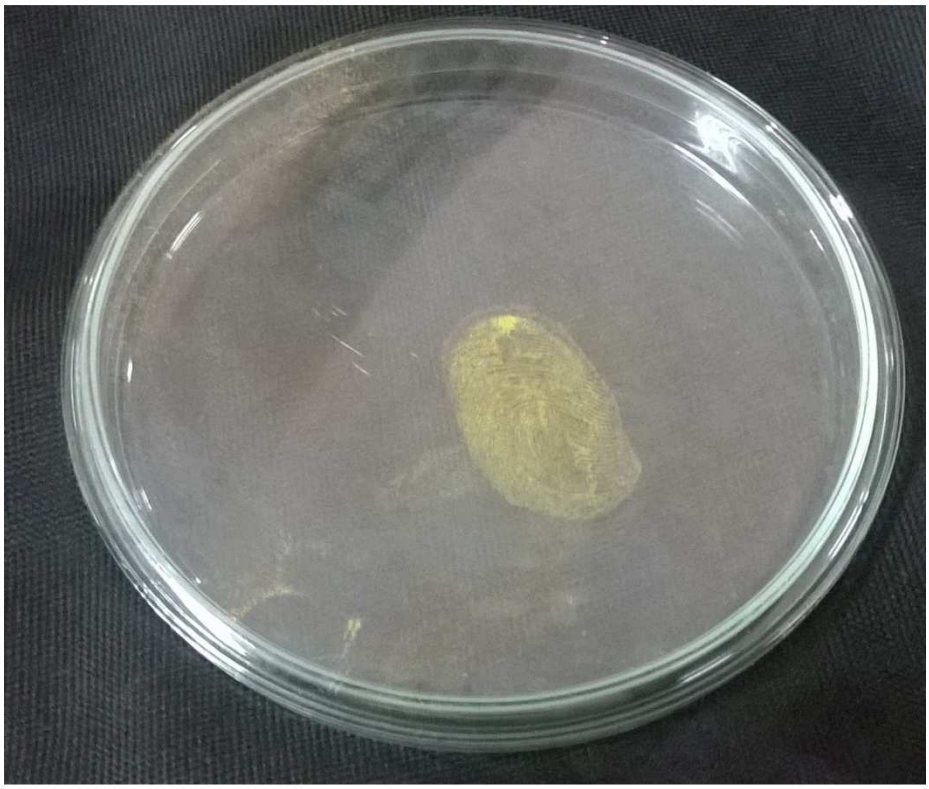
RESULTS AND DISCUSSION

Coal powder

{Fig.5}-Latent finger print obtained with coal powder

{Fig.6}-Uplifted latent finger print obtained with coal powder

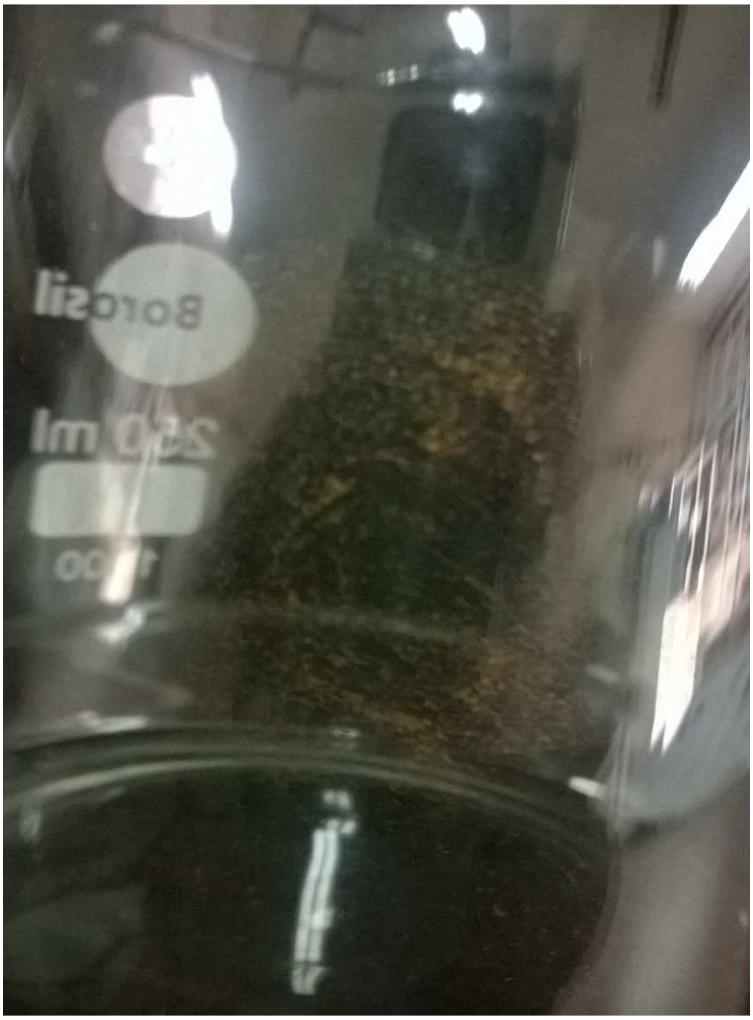
Turmeric powder:



{Fig.7}-Latent finger print obtained with turmeric powder

{Fig.8}-Uplifted Latent finger print obtained with turmeric powder.

Chilly powder:



{Fig.9}-Latent finger print obtained with chilly powder

Pepper:

{Fig.10}-Latent finger print obtained with pepper

On the basis of visual observation it was found that coal powder offered the best image {Fig.5}. Turmeric powder gave better result {Fig.7} when compared to pepper {Fig.10} and chilly powder {Fig.9}. The ridges were clearly visible when coal and turmeric powder were used. In the case of pepper and chilly powder the ridges were not that clear as coal powder. The finger prints were lifted using a cellophane tape and pasted on a white sheet of paper. Only coal powder {Fig.6} offered the best quality whereas other powders didn't give result as good as coal powder.

CONCLUSION

Coal powder gave the best result both in image development and in uplifting of the test finger print. Hence it can be concluded that coal powder is the best when compared to other three powders. Coal powder is cheap and it does not require much processing. Care should be taken to preserve the powder when used in the long run. Coal powder is non toxic as well.

Acknowledgement
We want to express our sincere gratitude to our beloved and chancellor Dr G.Viswanathan, and Respected Vice Presidents Sri Sekar Viswanathan and Sri G.V.Selvam for their constant support and help throughout this research.

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