

The Potential of Potato and Maize Based Snacks as Fire Accelerants

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Abstract : Arson is a crime which can provide exceptional problems to forensic specialists. Its destructive nature makes evidence much harder to find, especially when used to cover up another crime. There is a consistent potential threat of arsonists seeking new and easier ways to set fires. Existing research in this field primarily focuses on the use of accelerants such as petrol, with less attention to other more accessible and harder to detect materials. This includes the growing speculation of potato and maize-based snacks being used as fire accelerants. It was hypothesized that all 'crisp-type' snacks in foil packaging had the potential to act as accelerants and would burn readily in the various experiments. To test this hypothesis, a series of small lab-based experiments were undertaken, igniting samples of the snacks. Factors such as ingredients, shape, packaging and calorific value were all taken into consideration. The time (in seconds) spent on fire by the individual snacks was recorded. It was found that all of the snacks tested burnt for statistically similar amounts of time with a p-value of 0.0157. This was followed with a large mock real-life scenario using packets of crisps on fire and car seats to investigate as to the possibility of these snacks being verifiable tools to the arsonist. Here, three full packets of crisps were selected based on variations in burning during the lab experiments. They were each lit with a lighter to initiate burning, then placed onto a car seat to be timed and observed with video cameras. In all three cases, the fire was significant and sustained by the 200-second mark. On the basis of this data, it was concluded that potato and maize-based snacks were viable accelerants of fire. They remain an effective method of starting fires whilst being cheap, accessible, non-suspicious and non-detectable. The results produced supported the hypothesis that all 'crisp-type' snacks in foil packaging (that had been tested) had the potential to act as accelerants and would burn readily in the various experiments. This study serves to raise awareness and provide a basis for research and prevention of arson regarding maize and potato-based snacks as fire accelerants.

Keywords : arson, crisps, fires, food

Conference Title : ICF SST 2019 : International Conference on Fire Safety Science and Technology

Conference Location : London, United Kingdom

Conference Dates : September 25-26, 2019