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Risk Assessment of Occupational Exposure to Pesticides among Pesticide Distributors of Punjab (India) Using Single Cell Gel Electrophoresis

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ABSTRACT Punjab being the major state of India that utilizes pesticides comprises different populations, which are directly or indirectly exposed to the pesticides, mainly the pesticides manufacturers, formulators and distributors. Amongst these pesticide distributors are least affected considered despite their continuous exposure to them. The present study was undertaken to investigate the occurrence of genotoxic effects in pesticide distributors from three cities in Punjab. The methods used included Comet Assay to assess DNA damage. The results showed that a significant increase in the frequency of DNA damage was found. An increasing trend in genetic damage was observed between the workers with increasing years of exposure as revealed by an ANOVA test. Similarly, the effect of other confounding factors such as age, diet and alcohol drinking habits were also studied. Conclusively, the use of protective measures and other safety regulations is emphasized among the pesticide distributors to prevent further exposure to this group.