

5. CONCLUSIONS

PAHs, as a group of widespread environmental pollutants, were detected in most soil samples collected from Chiang Mai Province, with a wide range of concentrations. The main sources of PAHs are the results of anthropogenic activities, which contribute to the higher PAHs in soil from urban and suburban areas, compared with the natural environment. Motor exhausts are more important sources of pollution than cooking emissions for PAHs. Based on the results of chemical analysis in this study, the occurrence of PAHs at such amounts is not likely to be highly toxic both to humans and wildlife. However, *Salmonella* assay showed the mutagenic potential for most samples tested. PAHs alone are not responsible for all the mutagenic activities. The results combined with chemical identification and mutagenicity assay indicate other mutagens may exist in soil together with PAHs.

Although cancer risk assessment based only upon positive short term tests is less certain, in the absence of other data it would be advisable to avoid excessive and prolonged exposure to these pollution. The data of this study provide preliminary information for environmental conservation. They are also useful as reference for further research on PAHs in terms of comparison between different places, media, or time.