fireproofing materials collected at a high rise building had 0.20% of Amosite. On the other hand, in sample collected from Thailand about 14~14.56% of asbestos tile was Chrysotile, but no Amosite was detected. This study showed that the asbestos remain an important environment hazards in building materials in both Taiwan and Thailand.

FP-150

Phytotoxic Assessment of a Co-Compost from Different Ratios of Residue from the Sweetener Industry and Food Waste

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This research aimed to assess the phytotoxicity of co-compost produced from residue from the sweetener industry and food waste. Food waste was collected from the Faculty of Public Health cafeteria Mahidol University and residue from the sweetener industry was obtained from MC-Towa International Sweeteners Co., Ltd., Thailand. The mixture ratios between residue from sweetener industry and food waste were 0:100, 10:90, 20:80, 30:70 and 40:60. The composting time was processed until it reached the stable stage in 9 weeks. The heavy metal contents in produced co-compost were determined for all mixture ratios. The concentration of arsenic, lead, chromium and copper in produced co-compost were 3.26 - 7.81, 0.02 - 0.31, 0.79 - 3.03, and 1.60 - 4.78 mg/kg, respectively for mixture ratios of 0:100, 10:90, 20:80, 30:70 and 40:60, respectively. Contents of arsenic, lead and chromium in final produced co-compost were significantly different among the mixture ratios (p-value<0.05).
The results of this study indicated that the contents of concern heavy metal met the Thai, North America and European country compost standards. The major nutrients for plantation; namely, total nitrogen, available phosphorus and total potassium, had average contents in the range of 1.53 - 8.05, 0.18 - 0.48 and 0.0538 - 0.1026 %, respectively. The moisture content, pH and C/N ratio of final co-compost were in the ranges of 0.39 - 0.64, 6.21-6.97 and 4.98 -18.

FP-151

Exposure of Occupational Coffee Roasting Oil Fume

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In recent years the Coffee roasting business is booming in Taiwan. Home roasting coffee shops have opened one by one which bring more workforces into the roasting industry. Our last research points out that coffee roasting oil fume contain the chemicals of Caffeine, Catechol and Hydroquinone, these chemicals are harm material to human. The effects of acute and chronic roasting coffee oil fume on the metabolism of Sprague-Dawley rats (SD rats) in rat blood and urine were studied. SD rats were used as biological indicators separately in a chronic exposure experiment to low level of particulate oil fume created by roasting Brazil coffee in enclosed spaces for 17 weeks and in an acute exposure experiment to very high level of particulate oil fume for 4 weeks. Blood and urine samples from each rat were analyzed with biopsy of animal tissue slice was done to observe the organ for any pathological change. The blood results showed that the complete blood Count, liver function index inspection and immunoglobulin of acute exposed has significant difference from the unexposed, and the lung and kidney tissue slice has injury, proving oil fume has effect on rats, and presumably will have the same effect in those exposed to oil fume.

FP-152

The Gene-Work Exposure Interaction in Causing Occupational Herniated Intervertebral Disc (HIVD) in Taiwan

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Background: Herniated intervertebral disc (HIVD) is listed as an occupational disease in Taiwan's workers' compensation system. Although occupational and personal factors play a role in etiology of HIVD, genetic effect may also contribute to the pathogenesis of it.
Purpose: We conducted a hospital-based case-control study to examine the gene-work exposure interaction in causing HIVD.
Study Design: 62 cases and 53 controls were entered to the hospital-based case-control study. Every participant was assessed with questionnaire, MRI and BMD assessment, blood testing and genomic analysis, photographs taken of simulated working posture and lumbar load estimation.
Result: The result showed that HIVD are associated with older age, higher BMI, longer working tenure and higher education level. While categorized into 3 groups, the highest cumulative lift load and total load group had increased odds ratio of 2.6 and 2.5. After adjusted for age, gender, BMI, tenure, marital status and education level, the odds ratio for highest lift load was 2.7. Among these high lifting group, those with COL9A2 carrying a Trp allele seemed to have higher risk than those without a Trp allele. Also, those with CT/TT genotypes of VDR gene had higher risk than those with CC genotypes.
Conclusion: The result of the study suggested life time cumulated load are associated with HIVD, showing a dose-response gradient. COL9A2 with any Trp allele seemed to interact with lift load and played susceptibility factor among workers exposed to weight-lifting.