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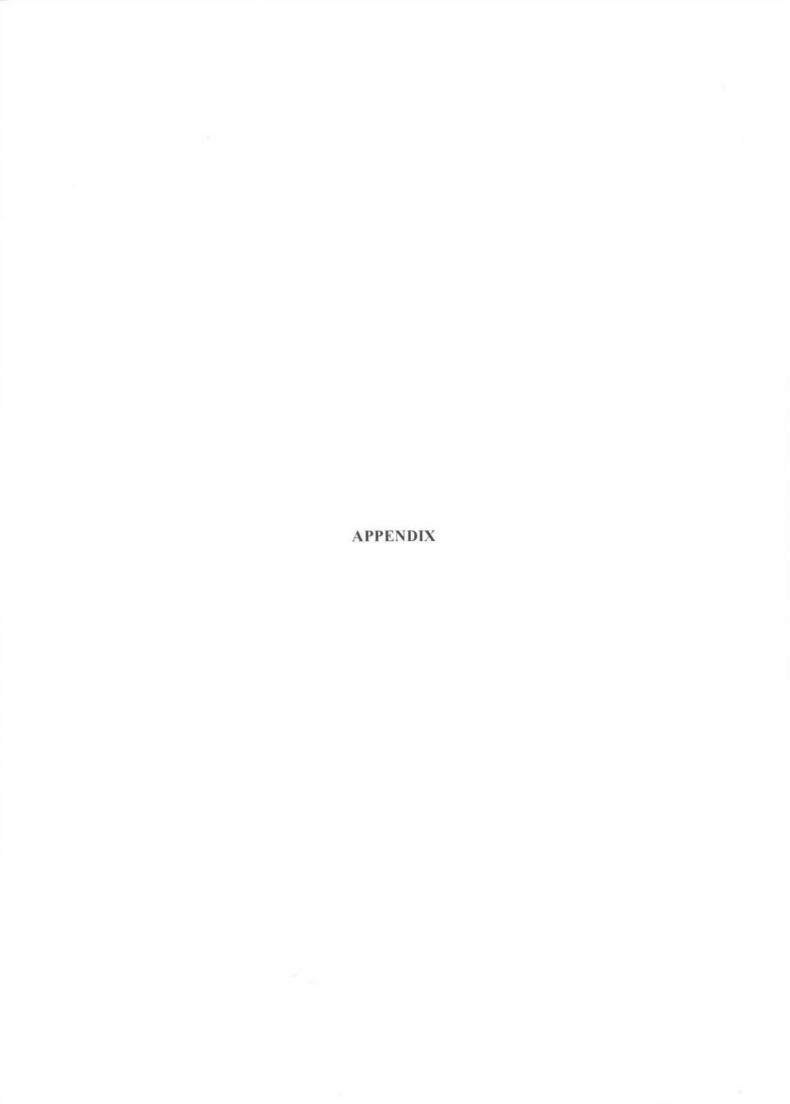
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APPENDIX

Radical scavenging power (RSP)

The DPPH method was used because this technique is easily applicable and widely used. DPPH is a synthetic free radical that accepts an electron or hydrogen to be converted to a DPPHH stable molecule. The disappearance of DPPH radical is monitored by the decrease in absorbance of solution at 517 nm. Estimation of RSP was carried out by four milliliters of 25 mg/l 1,1-diphenyl-2-picrylhydrazyl radical (DPPH) solution were well mixed with 1 ml of phenol, guaiacol, and syringol, the concentration of each solution was 10 mg/l in ethanol. Then mixed solutions were transferred to spectrophotometer cuvettes. In the blank, ethanol was used in place of the sample. Remaining purple color of DPPH was measured by using spectrophotometer (GENESYS 20 Thermo Spectronic) at 517 nm after 15 min incubation in darkness. RSP was calculated by the following equation:

$$RSP = \left[1 - \left(\frac{As}{Ab}\right)\right] \times 100$$

Where As is absorbance of samples and Ab is absorbance of blank

BIOGRAPHY

Miss Kulyakorn Khuanmar was born on April 25, 1973 in Sakolnakorn, Thailand. She obtained her B.Eng (Agricultural Engineering) in 1997 and M.Eng (Environmental Engineering) in 2002 from Khon Kaen University. Kulyakorn is the officer of the Ministry of Natural Resources and Environment. Her major responsibility relates to the national environmental plan and policy. In October 2003, she had got permission to leave for her Ph.D study in the International program in Environmental Management at Chulalongkorn University. She has completed her study by April 2007. Her interest is in application of new technology, such as nanotechnology, for hazardous waste treatment.